

In This Issue...

COVER FOCUS
Top Data Center Technologies

We bring you up-to-date on some of the newest technologies and trends related to data center storage, power, cooling, and networking.

Eye On Storage In The Data Center 1
New Trends In The Power Space 7
Keeping Things Cool In A Rack-Dense World 8
Up-&-Coming Networking Technologies 9

Data Center Best Practices

What can you do to improve your data center when it comes to backup, overall design, air management issues, and supporting telecommuting employees? Find out starting on page 24.



TECH & TRENDS

- Many small to midsized enterprises are **turning to the cloud** for at least a portion of their computing needs, but some do not know where to start when choosing the best cloud provider for their business needs**page 1**
- Slashing costs remains first and foremost on the minds of IT admins, but it is hard to forget about security. As admins know all too well, cost savings don't mean much when weighed against the collateral damage and legal liability a **major security breach** can cause**page 32**
- Amid the feature discovery and dreams of markedly improving an IT environment, the task of evaluating the **release candidate for any operating system** entails plenty of work and analysis**page 33**
- Some of the most time-consuming help desk issues are avoidable with some common sense. Here are a few tips to help IT managers **improve help desk efficiencies****page 35**
- The constant sleep/wake cycle of servers wastes tremendous amounts of energy and has spurred University of Michigan researchers to seek more efficient methods for **saving power during idle server time****page 36**

NEWS

- **Xerox CEO and Chairman of the Board Anne Mulcahy** will be passing one of her hats to someone else come July 1**page 3**
- The **Beta version of Windows 7 Ultimate** will expire Aug. 1 but, starting July 1, "bi-hourly shutdowns" will turn off users' PCs every two hours**page 3**
- The economy has forced many IT managers to stop **PC projects**, but a new study from Gartner indicates that most managers have chosen to postpone or scale back, rather than cancel, the projects**page 3**
- Intel will push back the release of its next-generation **Itanium processor** until the first quarter of 2010**page 3**

The Processor.com home page is frequently updated with new articles and hardware news to help you keep current. Visit www.processor.com today.

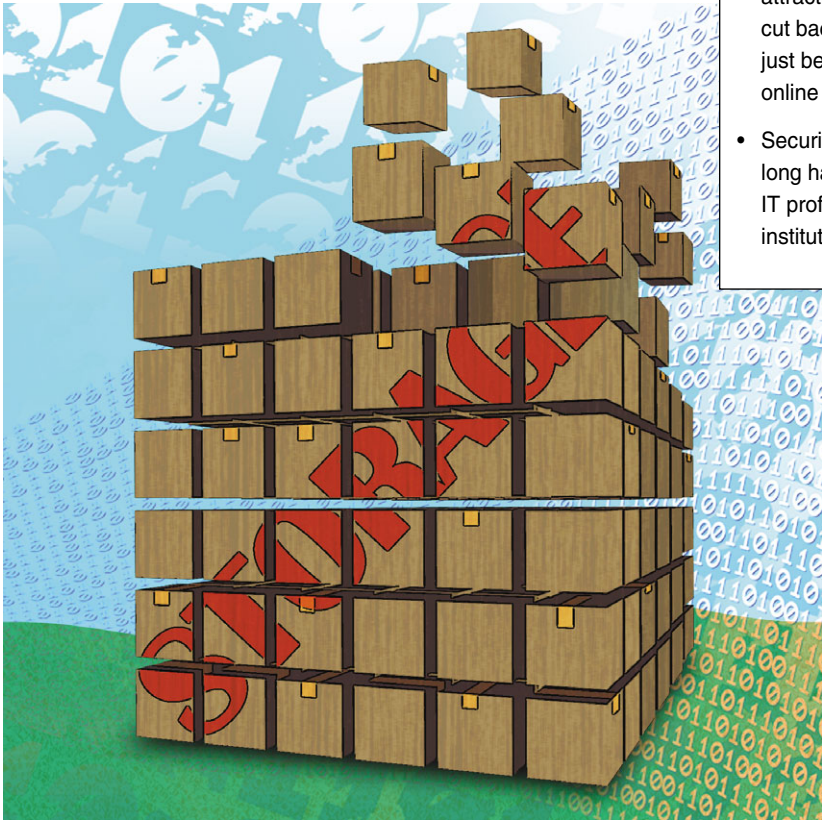
Eye On Storage In The Data Center

An Inside Look At The Technologies & Trends Stirring The Storage Industry

by Christian Perry

UNLIKE OTHER technology landscapes that hold their shapes with all the consistency of a jelly-fish, the storage market takes its sweet time in introducing technologies and trends. This can lead to complacency among data center managers, who might not give a second thought to their storage environments—after all, if everything's working fine, why make changes? However, a closer inspection of the storage industry reveals an ecosystem teeming with change within existing technologies, and much of that change can represent real value to data centers.

A prevailing impetus for change today is the struggling economy, which is forcing data center and IT



professionals to consider new methods for handling data. According to recent

Key Points

- Data reduction technologies are more attractive than ever as data centers look to cut back on costs, but these methods are just beginning to make a presence in the online storage world.
- Security and the ability to store files for the long haul will continue to be top-of-mind for IT professionals at health and government institutions, where regulations rule the day.

research from HP, 56% of technology executives say that storage consolidation will be a high priority to be considered for implementation this year. According to the report, investments such as this are expected to result in cost reduction, increased efficiency, and a strong contribution to the company's strategic goals.

"The architecture of storage hasn't changed in 50 years in terms of storing full copies of data," says Chris Gladwin, CEO of Cleversafe (www.cleversafe.com). "However, we are in the

Go to Page 6

What Shape Is Your Cloud?

Choose The Right Cloud Provider For Your Enterprise

by Chris A. MacKinnon

ACCORDING TO INDUSTRY EXPERTS, the "cloud" hanging around the enterprise isn't going away anytime soon. Many small to midsized enterprises are turning to the cloud for at least a portion of their computing needs, but some do not know where to start when choosing the best cloud provider for their business needs. It's not uncommon for an enterprise to purchase a product based on a company's reputation, but because cloud computing is a new solution, cloud providers do not have long track records; thus, there is no way to tell if a provider will deliver. We talked with industry experts to come up with tips and advice that data center and IT managers can use to pick a cloud provider.

Cloud Reasons

Josh Roebuck, sales and marketing associate at Joyent (www.joyent.com), says SMEs are turning to cloud providers for their computing needs for many reasons. Roebuck notes, "It's better, cheaper, and faster. First of all, there are no long-term contracts. And the cloud allows you to focus on your core business, not running a data center, and also allows you to test ideas and bring ideas to market more easily, quickly, and with less sunk costs." Roebuck says the cloud also offers a more energy-efficient approach to computing and matters to your "green bottom line."

Rob Lovell, CEO of ThinkGrid (www.thinkgrid.co.uk), says he can describe in a

Key Points

- When choosing a cloud provider, start with the services that you are looking to fulfill and the reasons you are looking to out-source in the first place. Do some research on the services you need so you can buy them on your terms.
- Make sure that the cloud platform you choose does not require you to configure your applications so that they only work on that platform.
- Look for clouds that provide access to world-class IT infrastructure that you can purchase in small, inexpensive, bite-sized pieces, rather than having to settle for second-class infrastructure because it makes economic sense.

few words why SMEs are turning to the cloud: "Cost (it is much cheaper per user

Go to Page 6

New DVD Technology In The Works

A new DVD technology is being tested at the Swinburne University of Technology in Melbourne, Australia. The new technology could someday allow a disc’s capacity to reach up to 10,000 times more than the current standard of 4.7GB. Called Multiplexed Optical Recording, the technology can create a “fifth dimension” and eventually store up to 4.6TB of data on a single disc. Current discs have three dimensions. The research team working on the project says the technique may be able to place up to 10TB of storage on a single disc. One concern with the new technology, researchers say, is the lack of a recording medium that could perform fast enough to write such large amounts of data.

Yahoo! Readies Beijing Research Center

Yahoo! reportedly has already built a new global research and development center in Beijing and will be officially announcing the new center this month. The new center is expected to focus on creating products and platforms for Yahoo! users worldwide. China-based Alibaba Group, which operates Yahoo! in China, will have no stake in the new R&D facility. Yahoo! owns about 39% of Alibaba.

Report Says GPS Could Fail; Air Force Disagrees

The United States Air Force, which is responsible for global positioning system acquisition, has fallen behind on its efforts to modernize the system. As a result, some military operations and civilian users could experience service disruptions as early as next year, according to a report from the GAO (General Accounting Office). The Air Force, however, says the system likely won’t fail but could experience deteriorations in service. In its report, the GAO says several factors contributed to the potential problems, including cost overruns and schedule delays with the Air Force’s efforts to successfully build new GPS satellites. The launch of the first new satellite under the current program has cost about \$870 million more than expected and isn’t expected to launch until November—three years later than planned. Older satellites are expected to start failing next year but, the GAO report says, there are measures the Air Force and others can take to minimize potential problems.

Smartphone Sales Continue Growth

Although worldwide mobile phone sales were down 8.6% year-over-year in the first quarter, sales of smartphones were up 12.7% during the same time period, according to Gartner. Smartphone sales accounted for 13.5% of all mobile devices sold during the first quarter, up more than 2% from a year ago. Much of the growth was driven by touchscreen products, says Roberta Cozza, Gartner principal analyst. Nokia led with a 41.2% share of the market (down from 45.1% a year ago), followed by RIM with 19.9% and Apple with 10.8%. Both RIM and Apple posted significant gains in market share over the past year.

Microsoft Loses Patent Case

Following a trial in Texas, Microsoft has been ordered to pay \$200 million to a Toronto software company because of patent irregularities involving a number of its software products. The case was originally filed by I4i in March 2007, stating that Microsoft had infringed on I4i’s patented technology for handling documents (U.S. Patent No. 5,787,499) in products such as Microsoft Word 2003, Word 2007, Windows Vista, and .NET Framework. Earlier this year, Microsoft had to pay Uniloc \$388 million in

another patent dispute. Microsoft says it is “disappointed by the jury’s verdict” and will appeal.

Xerox To Get New CEO

Xerox CEO and Chairman of the Board Anne Mulcahy will be passing one of her hats to someone else come July 1. Current Xerox President Ursula Burns will be taking over Mulcahy’s duties as CEO. Mulcahy, a 33-year veteran of the company, will continue her role



as chairman, a post she has held since the beginning of 2002. Her stint as CEO began in late summer 2001. Burns, who has logged 29 years with Xerox, took over the role of president in spring 2007.

Windows 7 Beta To Expire

The Beta version of Windows 7 Ultimate will expire Aug. 1, but, starting July 1, “bi-hourly shutdowns” will turn off users’ PCs every two hours. As of Aug. 1, a “this copy of Windows is not genuine” message will replace the Desktop wallpaper, and the installation will be declared “non-genuine,” according to The Windows Blog. However, the Release Candidate edition of Windows 7 Ultimate will continue to be freely available to registered users for use until June 1, 2010. Windows 7 RC’s bi-hourly shutdown period will begin March 1 of next year.

Microsoft Cancels EU IE Hearing

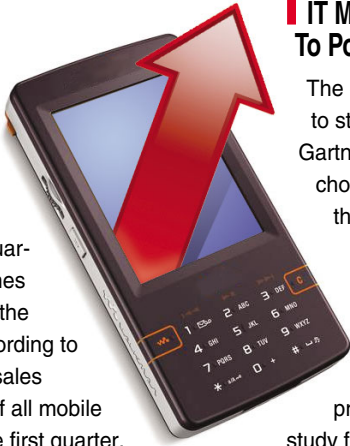
Microsoft canceled a hearing set for early June in which it planned to respond to European Union antitrust charges. In January, the European Union’s Competition Commission charged that Microsoft has an unfair distribution advantage because it bundles the Internet Explorer browser with its Windows operating system. The canceled hearing coincided with a worldwide antitrust conference in Zurich, Switzerland, which was expected to draw European antitrust regulators who are involved in Microsoft’s case. Microsoft said the scheduling conflict would have prevented some regulators from attending its hearing and decided to back out. Without the hearing, the commission will reach its decision based on written statements from Microsoft and its rivals.

IT Managers Prefer To Postpone Projects

The economy has forced many IT managers to stop PC projects, but a new study from Gartner indicates that most managers have chosen to postpone or scale back, rather than cancel, the projects. Only 12% of those surveyed say they have canceled a planned project, and 48% say some projects will be deployed this year as planned. Of the respondents, 475 were IT decision makers for enterprises with 1,000 or more employees. The study found that 43% of respondents expect to see a spending decrease in client computing hardware this year compared to 2008. Gartner says that “technology and service providers should ensure that they are ready for the recovery, when and where it happens.”

New Memory Technology Introduced

Unity Semiconductor has developed a new type of nonvolatile memory set to be a successor to NAND flash. The CMOx memory adds conductive metal oxides into the semiconductor process that allow for ionic motion. CMOx is capable of being scaled below 20nm with a volumetric density better than four-bits-per-cell NAND. It uses less than 1 microamp of write current per cell and has 10 times the write performance of NAND. Compared to NAND, it offers better endurance and costs less. Unity says pilot production of a 64Gb model should begin in the second half of next year, with volume production in the second quarter of 2011.



Former EMC Exec Can Work At HP

A Massachusetts court has ruled that David Donatelli, former president of EMC’s storage division, can work for HP, but he has to stay away from storage technology development because of a noncompete clause that forces him to keep away from that area for a year. Donatelli left the position at EMC in April to become an executive vice president for enterprise servers, storage, and networking at HP. EMC filed a suit against Donatelli in April after Donatelli tried to get a court order negating the employee agreement that states he cannot work for a competitor for 12 months after leaving EMC.

White House To Get Cybersecurity Directorate

The White House will establish a new directorate or position inside the executive branch designated to handle cybersecurity. President Barack Obama made the announcement, saying the new position would fall under the direction of the National Security Advisor. As part of a new group of advisers called the National Security Staff (consisting of international and homeland security staff), the cybersecurity directorate would be in charge of protecting the government from intrusions into systems such as the power grid.

Intel Again Delays Itanium Chip

Intel will push back the release of its next-generation Itanium processor until the first quarter of 2010. Code-named Tukwila, the processor will continue to go through architectural enhancements through the rest of the year; this decision reflects the history of Tukwila, which has been marked by multiple delays. Intel’s Tukwila chip was originally discussed in late 2003. The advanced chips are 64-bit quad-core for high-uptime servers and are ideal for mainframe-based server applications. Intel will produce Tukwila chips with a 65nm process, although the company also uses a 45nm process and is scheduled to upgrade to a 32nm process late this year.

IT Workforce Decreases Again

Although tech employment hit its peak in November 2008 at 4.058 million, at the end of April, it dropped to 3.87 million, according to the latest figures from the TechServe Alliance and the National Association of Computer Consultant Businesses. IT employment is down more than 2.5% from a year ago. The steady decline of IT workers in the United States has been the result of major technological enterprises cutting thousands of positions, including HP’s recent decision to lay off 6,000 employees. It’s expected that the decline will continue through the end of this year, but IT recruiters remain positive about the future of IT-related occupations.

VMware To Buy Stake In Terremark

VMware and service provider Terremark have agreed to a deal in which VMware will purchase a 5% share in the colocation and managed infrastructure services company. Details of the purchase include 4 million shares of Terremark at \$5 per share, for a total investment of \$20 million. The two companies have worked together for years, with Terremark using VMware technology in its service offerings.

Mac Clone Maker Files For Bankruptcy

Psystar, a startup company that makes clones of Mac computers that run OS X, has filed for bankruptcy. Apple has been in litigation with Psystar over copyright infringement claims. Psystar has filed countersuits alleging antitrust violations and other potential violations, but thus far has been unsuccessful in the courtroom. With the bankruptcy filing, Psystar has effectively given up its legal fight and may alleviate or at least lessen the financial responsibilities it owes to Apple.

Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you’d like listed, please send an email to feedback@processor.com.

- JUNE -

- [Upstate New York Oracle Users Group](#)
June 5, 8 a.m.
Buffalo State College, Butler Library 210
1300 Elmwood Ave.
Buffalo, N.Y.
www.unyoug.com
.....
- [AFCOM Central Ohio](#)
June 10, 11:30 a.m.
OSU Medical Center
410 W. 10th Ave.
Columbus, Ohio
www.afcomcentralohio.org
.....
- [AITP-Central Idaho](#)
June 10, 11:45 a.m.
Owyhee Plaza Hotel
1109 Main St.
Boise, Idaho
www.boisestate.edu/dpma/dpmaci/centida.html
.....
- [Portland Area Computer Measurement Group](#)
June 10, 8:30 a.m.
Con-way Inc.
2055 NW Savier St.
Portland, Ore.
regions.cmg.org/regions/pacmg
.....
- [AITP Washington D.C.](#)
June 11, 6:30 p.m.
Alfio’s Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com
.....
- [ISSA Northeast Ohio](#)
June 11, 8 a.m.
Corporate College East
4400 Richmond Road
Warrensville Heights, Ohio
neoissa.org
.....
- [AITP Pittsburgh](#)
June 15, 6 p.m.
Sokol Club-Southside
2912 E. Carson St., Pittsburgh, Pa.
www.aitp-pgh.org
.....
- [AITP Southwest Missouri](#)
June 16
Springfield, Mo.
aitpspringfield.org
.....
- [Oklahoma City AITP Chapter](#)
June 16
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40
.....
- [ISSA Blue Ridge](#)
June 17, 6 p.m.
USCG Operations Systems Center
408 Coast Guard Drive
Kearneysville, W.Va.
www.issa-blueridge.org
.....
- [ISSA Oklahoma City](#)
June 17
Spaghetti Warehouse, 101 E. Sheridan Ave.
Oklahoma City, Okla.
www.issa-okc.org
.....
- [AITP Omaha](#)
June 18, 5:30 p.m.
Seraph Corp.
Omaha, Neb.
www.aitpomaha.org
.....
- [AITP Tarheel](#)
June 18, 6 p.m.
Foothill Brewery, 638 W. 4th St.
Winston-Salem, N.C.
www.aitp.org
.....
- [Gartner IT Infrastructure, Management, and Operations Summit](#)
June 23-25
Gaylord Palms Resort and Convention Center
Orlando, Fla.
Gartner.com/us/iom
The intent of the Gartner IT Infrastructure, Operations & Management Summit is to assist IT infrastructure and operations leaders in delivering superior operations while they contribute to business advantage. Attendees at the conference will be empowered to make the everyday, critical decisions to succeed in both the tactical and strategic aspects of the job.

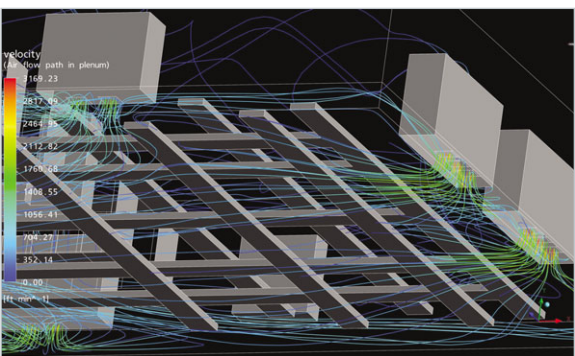
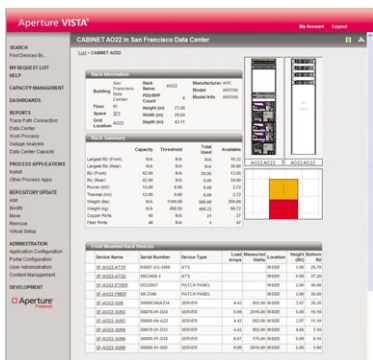
PRODUCT SPOTLIGHT

A Look At The Market For Environmental Monitoring Equipment

No matter how robust your data center's architecture, there's no getting around the fact that servers and network gear are inherently fragile devices. Too much heat or moisture, too little ventilation, and power fluctuations can cost your organization expensive downtime.

Environmental monitoring equipment can watch your data center's critical temperature and other readings and alert IT personnel when things get out of spec. It can also ensure quicker response time when a leaky pipe or a fire threatens your servers.

Whatever your business, environmental monitoring gear offers peace of mind.



Aperture VISTA

\$50,000 and up
Best For: Data centers with a need for holistic central management, planning, and automation from a single suite of software

■ Aperture VISTA is a modular service management suite that can provide a bird's-eye view of everything important to the configuration, capacity, and operation of a data center. VISTA's Infrastructure Monitoring module offers real-time status updates of physical conditions within the center. The browser-based module affords admins an overview of critical environmental variables such as temperature and humidity. It includes an alarm dashboard and alerting capabilities. Taken together with the myriad input from VISTA's other components, the Infrastructure Monitoring module can help you optimize cooling, power efficiency, and ROI.

(800) 346-6828 • www.aperture.com

Applied Math Modeling CoolSim

Less than \$7,500/year and up
Best For: Data centers looking to offload computational requirements for airflow modeling

■ Computer modeling of airflow and thermal efficiency within a data center can take a hefty amount of processing power, not to mention a potentially complex local installation. Applied Math Modeling's CoolSim takes the hassle out of the equation with a SaaS yearly subscription offering. Locally modeled jobs are securely transmitted to Applied Math Modeling's HPC cluster, where reports are generated in easy-to-understand HTML form. CoolSim's operation is highly automated, resulting in a streamlined analysis and modeling procedure as often as the need strikes. With tiers of service for data centers with light to heavy usage requirements, there's a CoolSim plan for any organization.

(603) 369-3793 • www.koolsim.com

AVTECH Room Alert 26W

\$1,095
Best For: Environmental monitoring in remote and hard-to-cable spots, including subfloors, cabinets, and air vents

■ Longtime environmental monitoring firm AVTECH puts its more than two decades of experience to work in the Room Alert 26W. This high-value, expandable device comes with various built-in and external sensors for humidity, temperature, and power, as well as flooding and room entry. Additional sensors are available for smoke, airflow, motion, sound, light, dry contacts, and even panic buttons. The Room Alert 26W can aggregate data from sensors in multiple locations over secure, ZigBee-compatible wireless links with a range of up to a mile. With additional AVTECH equipment, it can monitor up to 60 sensors. The Room Alert 26W's purchase price includes licenses for AVTECH's Device Manager and PageR Enterprise software. These browser-accessible applications provide access to settings and a range of alerts. The Room Alert 26W stands out from its rivals with an integrated UPS and wireless sensor hub, a replacement guarantee with free shipping worldwide, and unlimited maintenance and update support with extensive coverage.

(888) 220-6700 • www.avtech.com

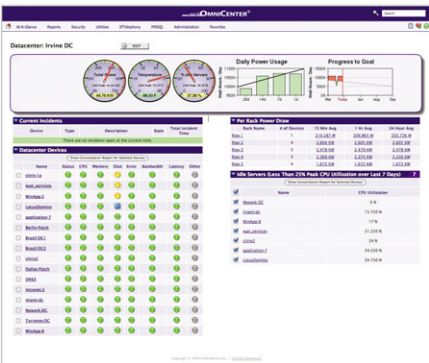


Emerson Network Power Liebert vEM-14

\$1,503.75
Best For: Small data centers and IT spaces

■ The Liebert vEM-14 from Emerson Network Power aggregates digital output from virtually any sensors and devices and incorporates them into an SNMP management system. It comes with integrated sensors for humidity and temperature. It also has four ports for additional sensors and can monitor door or panel entry, thermostats, UPSes, smoke detectors, air cooling systems, and water detection equipment. The Liebert vEM-14 is a solid management foundation for tasks such as security logging and alerting you to power outages and environmental issues.

(800) 543-2378 • www.liebert.com



Netreo OmniCenter DataCenter Dashboard

\$10,000 (approximate)
Best For: An enterprise seeking to trim costs through power savings and data center efficiency

■ Netreo's brand-new OmniCenter DataCenter Dashboard is a clientless, agentless appliance-based system that gives you at-a-glance, intuitive insight into your data center's temperature, power consumption, and capacity utilization. If the system is being used inefficiently via its capacity and power draw, you'll be the first to know. With the OmniCenter DataCenter Dashboard, you'll be able to more effectively plan virtualization projects. You'll also be able to calculate savings from hypothetical changes and determine how to best meet power management goals.

(866) 638-7361 • www.netreo.com



Network Technologies ENVIROMUX-SEMS-16

\$1,250
Best For: A data center with many and varied environmental sensors

■ Network Technologies' ENVIROMUX-SEMS-16, or Enterprise Server Environment Monitoring System, comes with built-in temperature, humidity, and power sensors. What's more, it can support up to 16 external sensors for environmental factors such as liquids, intrusion, vibration, and motion. Its alert avenues include email, SMS (with a GSM modem), SNMP, Automatic Voice Dialer System, and Web page updating, in addition to an audible alarm and LEDs. The unit also has eight digital sensor inputs and four digital device control ports. For even greater expandability, up to four ENVIROMUX-SEMS-16 units can interconnect for central management of the entire system.

(800) 742-8324 • www.networktechinc.com

PRODUCT SPOTLIGHT

Compiled by Marty Sems



Opengear EMD5000

\$195
Best For: Users of Opengear console servers

■ The EMD5000 is a cost-effective temperature and humidity sensor that connects to Opengear's console servers through CAT 5 cabling and an adapter. It also has inputs for two additional sensors. Opengear sells compatible probes for the detection of smoke, liquid leaks, vibration, and door open/close. The company says that its environmental monitoring device management software can also accept temperature and humidity input from other manufacturers' UPSes and PDUs.

(888) 346-6853 • www.opengear.com

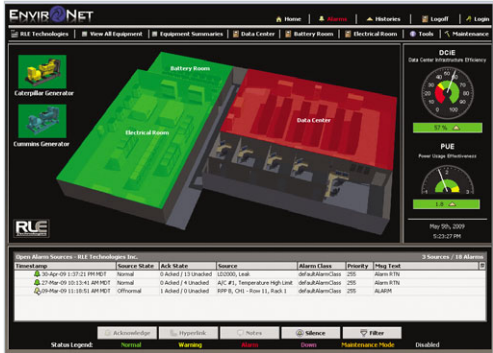


Opengear IM4200 Infrastructure Manager

\$1,295
Best For: A data center requiring a powerful, versatile out-of-band management server

■ This console server is Opengear's flagship product. The 1U, out-of-band management device is at home in data centers, remote offices, and colocation environments. In addition to its environmental monitoring sensory input capabilities, it's also able to handle other servers and virtual servers, PDUs, UPSes, routers, and switches. It's available in 8-, 16-, and 48-port models.

(888) 346-6853 • www.opengear.com



RLE Technologies Environet

Less than \$10,000 and up
Best For: Admins who want to tailor the reports of their environmental monitoring devices to their specific needs and preferences

■ Environet software from RLE Technologies helps managers customize the way their data centers' most critical information is presented. From a top-down view to a close-up of a particular sensor or device, Environet puts you in control. The software covers the usual environmental aspects of the system, as well as security, power, and HVAC conditions. With the scalable Environet in your data center's toolbox, your IT and facilities teams will be better able to coordinate on changes and corrections, RLE says. It supports SNMP, digital I/O, LONworks, BACnet, and Modbus.

(970) 484-6510 • www.rletech.com



Server Technology: Sentry POPS Switched CDU

Best For: Any rack in which space is at a premium

■ Veteran data center power distribution firm Server Technology knows that the best form factor for rack-level environmental monitoring gear is no additional form factor at all. With the company's Sentry POPS Switched CDU, you'll get monitoring equipment built right into a top-of-the-line cabinet PDU. With dual temperature and humidity probes, Server Technology per-outlet power-sensing CDUs can monitor each rack's cool and hot sides to alert IT to sudden heat spikes indicating a ventilation failure. With additional equipment and probes, the POPS can keep tabs on potential water leaks and provide door opening and closing timestamps for logging purposes. The POPS products support remote restarting, Web access, alerting, outlet lockout, load shedding, and autorecovery when sensor readings fall back within parameters.

(800) 835-1515 • www.servertech.com



ServersCheck IP-based Environmental Sensors

\$387 and up
Best For: Server rooms and data centers with a need for far-flung, space-saving environmental condition probes

■ Small sensor devices can fit where larger ones can't—that's why ServersCheck's environmental monitoring probes give you such flexibility in deployment. Each ServersCheck temperature, humidity, liquid, and power outage detector comes with its own IP address. This makes each probe instantly identifiable to a central management device running ServersCheck's Monitoring Software, which can communicate with network management systems using SNMP and alert tech personnel via methods such as email or SMS.

(800) 550-2975 • www.serverscheck.com



Temperature@lert USB Edition

\$129.99
Best For: Admins with a need for a simple (yet powerful) temperature monitor

■ Simple products at the right price—that's the thrust of Temperature@lert's offerings. In contrast to expensive products with long lists of integrated features, the mission of the company's USB probe is simple: to email you when the ambient temperature exceeds the limits you set. The sensor supports SNMP, SMTP authentication, XML and text logging, and even optional shutdown of the PC. It's a Windows XP/2000/ 2003 Server/Vista device, but there's also a \$299.99 Wi-Fi version that's suitable for Linux environments. And Temperature@lert's tech support lines are staffed by the engineers behind its products, so they definitely know what they're talking about.

(866) 524-3540 • www.temperaturealert.com

Eye On Storage In The Data Center

Continued from Page 1
midst of rapid change in terms of the type of data we are storing, the access patterns, and the sheer quantities of data.”

Paring Down Storage

Many experts point to cost-cutting as the thrust behind today’s biggest storage trends, and for good reason, explains Carter George, vice president of products for Ocarina Networks (www.ocarinanetworks.com). Because data centers are being forced to do more with less, they’re moving toward storage efficiency and data reduction technologies (such as thin provisioning, unified storage, data reduction, and compression) as potential answers to that challenge. File storage vendors are leading the charge, with George noting that some companies have made storage efficiency and deduplication the cornerstones of their product and marketing campaigns, an effort that is forcing other storage vendors to fall in line.

“With the current economy, customers are looking for backup solutions that will reduce costs and simplify storage opera-

tions—deduplication is that solution. Deduplication allows businesses to retain data on disk for longer periods of time, so less time is spent searching for data. It also reduces costs and capacity by reducing duplicate data [and] enables customers to minimize administrative overhead, reduce floor space, and lower energy consumption by decreasing storage capacity requirements,” says Kyle Fitz, director of marketing for HP’s Storage Platforms division (www.hp.com).

According to George, one reason data reduction is a hot topic is the fact that it’s been validated in other parts of the data center. For example, deduplication has become the norm for backups, with disk-based backup targets with built-in deduplication quickly replacing tape methods. But although compression and simple deduplication have become as commonplace as WAN optimization, applying this model to the online storage world is more difficult, he says, because the algorithms need to be focused on different things, and the insertion model is tougher. Further, people aren’t apt to

replace their storage or storage vendor to obtain data reduction, George says. As such, online storage is just now beginning to see the early stages of data reduction technologies making their way toward its realm.

Keep It Long, Keep It Secure

Despite the down economy, healthcare and government facilities are actually

ernment institutions will be security, and data centers will be seeking systems that virtualize data to an ultimately secure format in both physical storage and transport.

On The Decline

Although deduplication, storage virtualization, and other technologies could indeed bask in some level of limelight in the coming months and years, other technologies are bound to lose favor in the data center market. One of these, says George, is Fibre Channel block storage.

“With the current economy, customers are looking for backup solutions that will reduce costs and simplify storage operations—deduplication is that solution.”

- HP's Kyle Fitz

enjoying big growth, says George, which equates to big storage growth. Coinciding with this growth are the demands placed on these facilities by regulations and compliance to store certain files and data types for long periods of time. For this reason, George predicts low-cost archival and storage platforms and data reduction will continue to gain significant traction in these markets.

“There are a couple of other things that tie in,” he says. “One is object-based stores. Things like the cloud—Amazon S3, IBM’s cloud plans, and industry-specific clouds—tend to have object interfaces. You use HTTP GET and PUT to place a file in the object store for long-term storage. It’s a better fit than NFS or CIFS for archival storage, and I think you’ll see uptake for this kind of storage for specific markets like healthcare and medical images.”

Cleversafe’s Gladwin adds that a key trend for health, education, and gov-

“[These] arrays are disproportionately expensive compared to other offerings. Like the mainframe, they will have a niche in the Fortune 500 database data center, but widespread adoption is going to decrease. . . . The FC crowd is trying to preserve FC by doing FCoE, but it may be too little, too late,” he says.

Similarly, Gladwin says RAID is also headed for a decline, but more for technical reasons. “It mathematically is reaching a breaking point based on 1TB drives. RAID 6, based on parity, cannot recover from more than two simultaneous failures or two failures and a bit-rate error. Typical SATA drives have a published bit rate error of 1014, meaning once every 100,000,000,000,000 bits, there will be a bit that is unrecoverable. Although this failure rate seems insignificant, when reading 100 terabytes, it is nearly certain there will be an unreadable bit, and if this read happens to be during a rebuild, data will be lost,” Gladwin says. [E]

Most Promising Technology: Cloud-Based Storage

Around every corner of the data center, chunks of infrastructure are being identified as candidates to move to the cloud. Some technologies fare better than others in the cloud, but storage is an appealing fit and continues to carry the flag for the entire cloud computing movement.

The number of storage vendors hopping on the cloud train is impressive, but experts

advise caution before ditching traditional storage methods for cloud-based versions. Because data resides outside of the data center (unless an internal cloud is used), organizations must thoroughly vet vendors to ensure they know where data will be stored, how it will be stored, what security technologies and policies will be in place, what recovery options are available, and what will happen to the data if the provider goes out of business.

What Shape Is Your Cloud?

Continued from Page 1
than managing in-house), reliability (these cloud infrastructures are huge and can provide resilience and business continuity off the bat), and ease (just click a button and it’s deployed).”

Cloud Shapes

Lovell says when choosing a cloud provider, start with the services that you are looking to fulfill and the reasons you are looking to outsource in the first place. Lovell comments, “Cloud computing is really just a word for hosted services. There are a lot of providers giving away storage of CPU processing power, but only a few are translating this into actual services. As an SME, you should do some research on the services you need so you can buy them on your terms.”

Asking fundamental questions can help, says Roebuck. “First,” he says, “it’s important to be clear on why you are choosing cloud hosting and what problem you expect it to solve or what added benefit you expect it to provide.” Roebuck says it’s also important to be clear on what you mean and understand by ‘the cloud’ or cloud computing. For example, do you

need SaaS (software as a service), PaaS (platform as a service), or IaaS (infrastructure as a service)?

Barry Lynn, chairman and CEO of 3Tera (www.3tera.com), says if your services have a lock-in, don’t waste your time. Lynn elaborates, “Some cloud services can hold you hostage. You get your applications on their cloud and it can be very difficult to get them off if you are not happy with the service. Make sure that the cloud platform you choose does not require you to configure your applications so that they only work on that platform. And make sure your provider has multiple physical locations so that if you have to, you can move your application.”

Lynn says most importantly, though, look for clouds that provide access to world-class IT infrastructure that you can purchase in small, inexpensive, bite-sized pieces, rather than having to settle for second-class infrastructure because it makes economic sense. He says cloud computing is not simply running your applications on someone else’s hardware. “It is the ability to encapsulate applications so that they can run anywhere (on any idle, available hardware), and you only consume and pay

“Some cloud services can hold you hostage. You get your applications on their cloud and it can be very difficult to get them off if you are not happy with the service.”

- 3Tera's Barry Lynn

Here To Stay?

We asked Barry Lynn, chairman and CEO of 3Tera (www.3tera.com), and Rob Lovell, CEO of ThinkGrid (www.thinkgrid.co.uk), if the cloud is here to stay. Lynn comments, “Yes, cloud computing is real and it’s here to stay. Cloud computing, defined as abstracting applications from their physical resources and enabling dynamic scalability up and down, vertically and horizontally, is the future of IT and will, over time, replace traditional IT and data centers as we know them today. If you are talking to other vendors, they may have different answers, but after three years on the market with a real product, and with over 300

happy customers, mostly SMEs, data center operators, and hosting providers, we have all the proof points for the future of cloud computing as the next generation of IT and data center operations. Of course it will take time until it is vastly adopted.”

Lovell concludes, “It has already been around for a good decade or more, just under different guises. So yes, I think outsourced ‘off-premise’ services will continue to grow as they have done. Whether cloud computing as a term sticks, I think it probably will, given the amount of momentum it already has.”

for the resources you are using, while always having enough resources available when you need them.”

Cloud Delivery

The key to making sure your cloud provider will deliver, says Lynn, is in the SLA (service-level agreement). He explains, “Ask them if they guarantee performance and availability. Ask them what their limitations are with regard to operating systems, middleware, databases, infrastructure, etc. If they have many limitations, go somewhere else.” Lynn says it’s important to ask how easy it is to port an existing application into the cloud: “If you have to make changes to your existing code to run it in the cloud, the moment you decide to move out, your application will need to be changed again.”

Roebuck says it’s important to be clear on what kind of expertise and resources you have in-house and what you expect the cloud provider to offer. He asks, “Are you

looking for managed, semimanaged, or unmanaged hosting? You also need to ask questions like: Does the provider offer software to help manage the environment? Does the provider specialize in one particular programming language, or do they have broader experience and expertise? Are you looking for long-term application hosting or running batch jobs that may need to scale up for a matter of hours?”

Lovell says the key for a great cloud delivery is the reliability and support around the services you are purchasing. He elaborates, “It’s important to pick a provider that can provide high service levels (guaranteed), 24/7 support, and has experience in the areas you are looking at. Case studies or reference customers are a must. I think the key thing is to read through the jargon when choosing services. Understand what you need and why you are doing it and get the provider to explain how they are going to meet these goals.” [E]

New Trends In The Power Space

Sophisticated Equipment & Remote Management Are Improving Power In The Data Center

by William Van Winkle

IN A TIME OF TIGHTENED BELTS, a lot of focus is put on power consumption in small to midsized enterprises. Companies are feeling more and more pressure to increase efficiency and do more with less in all areas of operation, and power is no exception. Here is a look at some of the technologies and trends in the power space today.

Better Accuracy With Load-Assessing PDUs

The need for greater power efficiency springs not only from controlling costs but also the fact that, in certain geographies, utilities are telling some companies they simply can't supply any more power. Data centers are forced to better manage what they already have. According to Jim Scherr, director of sales and operations at PDUs Direct (www.pdusdirect.com), this is pushing some enterprises to adopt DC power, if it's available, or low-voltage power supplies—anything that can lower energy usage but still maintain high compute and storage server density within data center racks.

Of course, it's hard to determine what your actual energy usage is—and thus how much power infrastructure is needed—unless it's accurately measured.

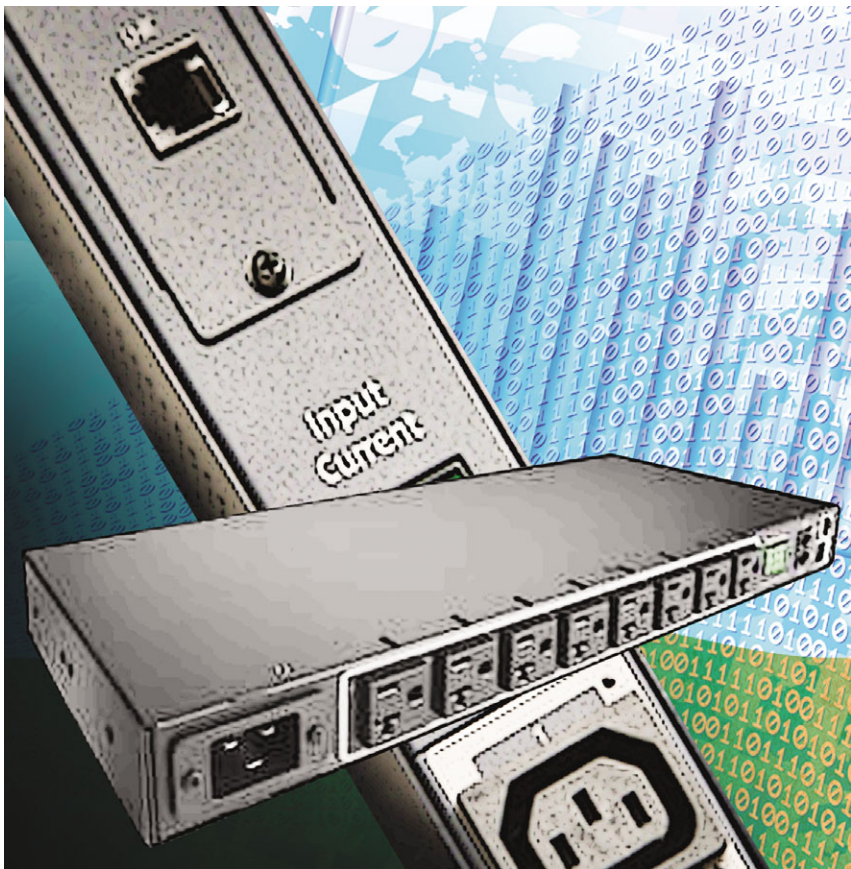
“A lot of times, people don't even know how much power they're drawing on each of their circuits,” says Scherr. “If they're basing their assumed power usage on equipment specs from the manufacturers of the servers, routers, switches, etc., a lot of that stuff is rated for top-end load—as high as that piece of equipment is going to draw. But in actuality, they usually draw about 40% less in normal usage. Because of that, a lot of people are underutilizing the circuits they have.”

An important step toward better accuracy can involve using some sort of monitored power distribution unit. A basic PDU simply

provides power distribution to a rack, but a metered PDU will provide aggregate load information in addition to power distribution. A switched PDU goes one step further by providing remotely controlled individual outlets. Switched PDUs can sit at the end of every row, or perhaps at the UPS level, and help data center managers understand where they have the overhead to add additional equipment, often without adding more power whips or conduits under the raised floor.

Control From Afar

Switched PDUs hint at another of the major power trends now underway: increased monitoring and remotely managed control. “The most dominant trend I see right now is a need by end users, if not to manage their power remotely, at least to be able to monitor what their consumption is and be more proactive in managing it,”



says Scherr. “Power was always something the facilities guys did. They would just show up, hand the IT guy an outlet, and IT would just plug and plug and plug until the circuit blew. Then he'd unplug one thing and say, ‘Well, that should be safe.’ That's not effective management.”

Most Promising Technology: Smart Power Management Tools

According to Tim Phillips, vice president of International Rectifier's enterprise power unit (www.irf.com), “Leading data center equipment providers have set goals to increase MIPS/W by a factor of 10 by 2010, while reducing overall power consumption by 20%. The winners will be those who successfully execute strategies to decouple MIPS from watts, allowing more processing power to be crammed into smaller enclosures to reduce electricity and building infrastructure costs.”

The key to capitalizing on this trend, notes Phillips, is to use smart power management

tools. The object is to eliminate “thermal throttling,” that endless start-stop-start cycle that accompanies fluctuations in server systems' power draw. Smart power management records trends in power usage, learns to anticipate loads, and can then “alter the load's electrical characteristics to limit its power and establish the correct cooling conditions in advance through energy-efficient variable-speed motion control. This can eliminate up to 20% of server total power dissipation.” Phillips anticipates that such management systems can cut up to 25% of a data center's systems energy dissipation.

Key Points

- Many small to midsized enterprises do not adequately know the level of power efficiency present in their data centers; however, metered and switched PDUs can help give more granular control over power output and provide monitoring data back to admins.
- Increased monitoring and management through remote solutions can yield excellent improvements in lowering downtime by alerting admins to outages when they happen.
- Generator technology is getting greener as companies aim to increase efficiency.

High-end PDUs that allow monitoring now often use three-phase power supplies and go up to 400V power, but they remain fairly expensive. However, Scherr says that lower-end products better fitted to the SME market—units in the 110V, 208V, and 20A range—have come down considerably.

These switches not only have the ability to turn outlets on and off but also contain firmware options for programmable power-up sequencing, integrated temperature and humidity monitoring, and SNMP alert systems. If a computer room gets too hot, for example, the system can automatically begin to shut down equipment based on user-defined instructions.

An increasing number of monitoring tools are coming within reach of SMEs. Well-designed UPS deployments can put resistance charts on a remote admin's console showing any batteries that fall outside of approved levels. Branch circuit monitors can keep tabs on each PDU output circuit. The more monitoring can be effectively

implemented, the more downtime can be proactively averted.

Progress In Staying Put

Of course, not everything changes. According to Jeff Wildman, vice president of Critical Power Exchange (www.criticalpowerexchange.com), the generators he sold to data centers 10 years ago are pretty much the same as the ones he sells today and expects to keep selling in the future.

“Power technology just hasn't changed that much,” Wildman says. “It's still about batteries and diesel. With generators, you could say they're getting more green. They're running cleaner, going to EPA Tier 3 from Tier 1. That means more efficiency and less pollution. I do expect to see more of that going forward.”

Over the years, Wildman says that even with the skyrocketing of compute densities and power demands, the most common generators going into data centers fit in the 500 to 2,000kW pocket. However, in order to stay in this pocket in the coming years, Wildman believes companies will need to concentrate on improving their efficiency. ■

Debate Rages Over Who Should Control ICANN

By the late 1990s, the Internet had undeniably become a world-changing communications and commerce technology. And the United States government realized the need for an organization to oversee the Web.

Thus was born ICANN (the Internet Corporation for Assigned Names and Numbers) in 1998. A nonprofit organization, ICANN is responsible for approving new TLDs (top-level domains, such as .com and .net), issuing IP addresses through its IANA (Internet Assigned Numbers Authority), and maintaining the DNS (domain name system). ICANN also deals with the Internet's protocols and security.

The United States still controls the TLDs' root server system at the heart of the Internet and has authority over ICANN through the Department of Commerce, as well as over IANA through a procurement agreement. However, the Joint Project Agreement between the government and ICANN ends Sept. 30.



It's about time, say some critics. In May, the European Union's Viviane Reding, commissioner for information society and media, called for the United States to relinquish much of its authority over ICANN. She advocates that international groups be convened to formulate Internet governance policy and to provide judicial review for the organization. The latter service has been provided by the California court system, as ICANN's headquarters is in Marina Del Rey.

Truly Global Network

Proponents of such a change point out that despite the Internet's origin in the United States, the Internet has since become a truly global network. In addition, most Web users don't live in the United States, and about half of all Web pages are in languages other than English.

“We agree with Ms. Reding's position that the Joint Project Agreement between the U.S. Commerce Department and ICANN should be concluded without extension or replacement by a similar document,” says Paul Levins, ICANN's vice president of corporate affairs. “After 10 years, it's clear that ICANN's model works very well, though we will always look at more ways to make ICANN accountable in the best interests of a billion-and-a-half global Internet users.”

Meanwhile, there is opposition to the idea from those who are unwilling to diminish the United States' influence over such a powerful network. Others believe that without strong U.S. oversight, ICANN would become paralyzed with competing interests.

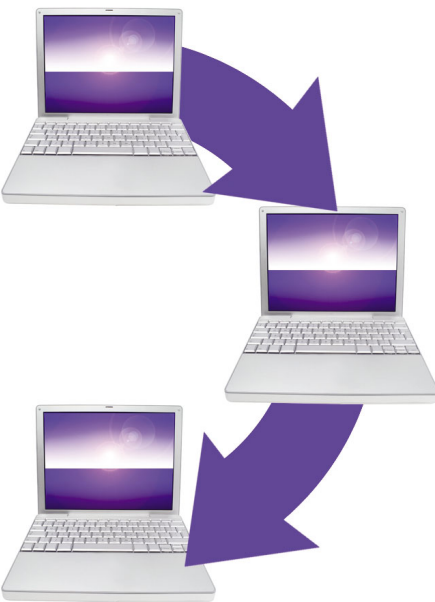
by Marty Sems

Study Shows PC Refresh Rates Better Than Expected

Intel commissioned Wipro Product Strategy and Architecture to survey CIOs and equivalent IT decision makers in North America and Europe, and what it found regarding PC refresh cycles may surprise you.

According to the study, two-thirds of companies with at least 25% of their PC fleet represented by notebooks still intend to maintain their current refresh cycles or even accelerate them, regardless of the economic downturn. Only about a third of enterprise-level companies with notebooks comprising 25% of their PCs plan to slow their PC hardware refresh rates this year.

About 60% of the companies surveyed are refreshing their client PC fleets at the same rate they maintained before the economic downturn began at the end of last year. Less than 10% of those surveyed say they plan to accelerate their refresh plans. Intel credits the relatively stable PC refresh cycle to today's more hardware-demanding applications, as well as the need for hardware that exhibits better security, energy efficiency, and lower cost of ownership.



Reduced Operational Costs

Rob Crooke, general manager of Intel's Business Client Group, says companies seeking to replace 4-year-old PCs with new systems can see an average 50% reduction in operational costs (up to 52% savings for desktops and 48% savings for notebooks). The study also found that the costs of securing and replacing parts in nearly obsolete PCs can exceed \$600 per desktop and \$1,100 per notebook. Intel goes on to suggest that companies can save more by adopting a three- or even two-year refresh rate.

But Daniel Okubo, technology analyst at Datamonitor, takes a more cautious outlook, saying that the proportion of IT budgets that are falling has risen between 2008 and this year, directly in relation to the state of the global economy. "I believe that when we receive the latest results from our IT decision maker survey, we are going to see again a rise in the proportion of enterprises that are going to decrease their IT expenditure. That said, the majority of enterprises will, as illustrated by the Intel study, maintain or increase their IT investment." Okubo expects enterprises to delay refresh cycles until absolutely necessary, affecting IT expenditures until at least 2010. That means hardware vendors are going to be particularly vulnerable during this period.

by Andrew Leibman

Keeping Things Cool In A Rack-Dense World

Streamlined Airflow, Eco-Friendly Refrigerants & Liquid Cooling Are Trends To Watch

by Drew Robb

• • •

COOLING HAS GROWN in importance steadily over the past few years. Now, with budgets tightening, it is gaining further attention as data center managers seek to do even more with a whole lot less.

"The current economy has resulted in delays in many new data center upgrade projects, so managers have to squeeze more thermal efficiency from their existing data centers," says Paul Bemis, CEO of Applied Math Modeling (www.koolsim.com).

Thermal Modeling

In environments that are constrained by power or space limitations and are in need of better cooling efficiency, one technology that is gaining ground is modeling of the thermal environment. In addition to highlighting hot spots, it can graphically display areas of poor air circulation and even show where too much cooling is taking place.

According to Bemis, there are three primary drivers at work on the energy efficiency front: a continuing increase in server density, a growing need to reduce the carbon footprint of data centers, and a steady increase in energy costs.

"These three factors are working together to drive data center managers to be in better control of the data center thermal environment," he says. "Studies have shown the majority of data centers are overcooled by a ratio of 2.5x and still encounter hot spots 10% of the time."

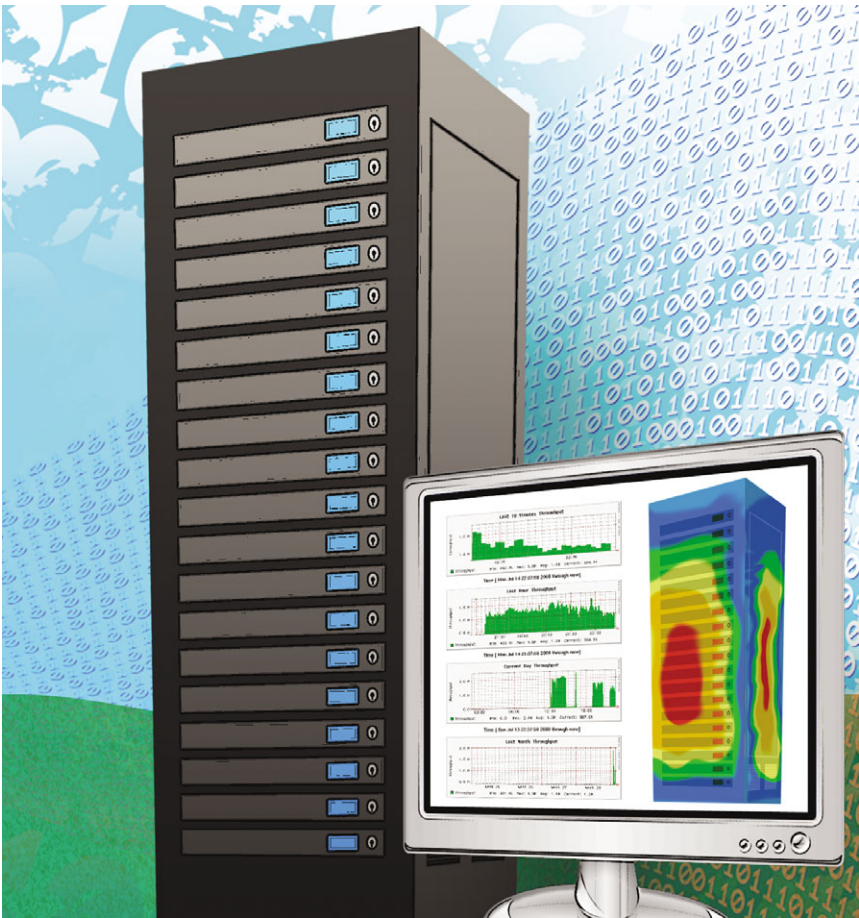
What that means is that just pumping cold air into the space is not enough because that cold air may not be getting to where it is needed. Thermal modeling offers a relatively inexpensive way of seeing why it isn't arriving at the hot spots and verifying that adjustments to cooling flow lines are achieving the desired results.

Cooling & The Environment

The Environmental Protection Agency is tightening the noose on a host of pollutants.

Cooling products such as those used in computer room cooling systems are also on its radar screen, including localized cooling boxes or systems that use refrigerants to bring cold air to areas of excess heat. As a result, manufacturers are being forced to develop more environmentally friendly refrigerants that do not contain greenhouse gases, one of the primary contributors to the depletion of the ozone layer.

"As well as better refrigerants, environmentally friendly controllers do not contain hazardous substances which can otherwise enter landfills and leach into groundwater," says Eddie Stevenson, CIS marketing supervisor at MovinCool (800/264-9573; www.movincool.com).



Another way this trend impacts the manufacturing sector is in the paints used on the units. Powder coatings are now preferred, as they are recyclable and do not contain solvents that can release volatile organic compounds into the atmosphere.

Taking It To The Chips

Not so long ago, it was enough to blow cold air into the room from the sides or underfloor. Gradually, however, cold air

Key Points

- Thermal imaging is a good way to get an idea of how your cooling system is performing and where there is room for improvement.
- Environmental concerns are changing the way cooling products are manufactured and implemented.
- Closed-loop cooling, direct server cooling, fan reduction, and liquid cooling are some popular new ways to increase cooling efficiency.

has been brought closer and closer to the servers via local cooling units. These make use of water or refrigerants that typically sit right above the enclosures.

The latest aspect of this trend is taking the liquid right down to the component level.

Closed-loop cooling, for instance, takes heat directly from chips and removes it. Instead of using fans to blow air over the components or a heatsink that sits above it to dissipate heat, closed-loop cooling transports water directly to the components.

Micro-channel coil technology is another highly efficient heat-exchanging technology. These coils lie right on top of the chips as direct-contact cold plates and deal with hot spots on the chip level.

Eliminating Fans

What many users don't realize is that the fans

that blow air through servers consume 10 to 15% of supplied power, according to Fred Rebarber, director of sales and marketing for the Cooligy Group at Emerson Network Power (www.cooligy.com).

"Using fans to blow cold air around the room consumes a lot of power and isn't very efficient for cooling," he says. "The focus needs to be on how to reduce the heat generated and on making cooling systems more efficient."

With liquid able to be brought to the chip, the natural progression is to use it widely to dispense with power-draining components such as fans. One way to accomplish this is to use direct server cooling. This essentially consists of thin plates that can be slid between each server in a rack to bring heat down without the need to pump a large volume of cold air through the machine.

"Eventually, we could get to the point where we don't need fans in servers," says Rebarber. "Direct server cooling means the taking of heat directly from sources on chips, boards, and memory. It is accomplished by bringing the cooling fluid to a heat exchange interface within the server chassis."

In addition, direct server cooling means no fan noise and fewer failures related to fans breaking down. ■

Most Promising Technology: Liquid Cooling

According to the Uptime Institute (www.uptimeinstitute.org), the top of the rack is the hottest area of the data center; however, modeling of server room temperatures reveals that most cold air is consumed in the lower part of the rack, leaving the top servers open to overheating. Thus, liquid cooling is being used more and more as the best way to bring down the temperature of upper-rack hot spots.

According to Fred Rebarber, director of sales and marketing for the Cooligy Group at Emerson Network Power (www.cooligy.com), air is only good for a maximum density of

15kW per rack in the most efficient settings. In most cases, air can only manage a modest 3 to 6kW. But in an age of multicore chips, blade servers, and virtualization, the average density per rack is skyrocketing. As liquid is more efficient at cooling than air by several orders of magnitude, it is no wonder it is gaining ground in the enterprise.

"Liquid cooling opens the door to the possibility of 60 to 80kW per rack," says Rebarber. "Instead of just putting liquid cooling units on coils on the door, you can put them on each rack server. This can greatly increase the amount of cooling done to racks."

Up-&-Coming Networking Technologies

Ultra-Fast, Reliable & Affordable Applications Coming Soon To An Enterprise Near You

by Bruce Gain

DATA CENTER MANAGERS are constantly hearing about new and exciting technologies that are supposed to transform networking applications. However, between the marketing hype and the extra cost, many so-called “revolutionary” technologies often never live up to their promise. Although it’s impossible to know what will happen in the future, here are a few up-and-coming networking applications that experts expect to make networks faster, more efficient, or more robust in the months and years to come.

The 100 Gigabit LAN

Very fast LAN network speeds of 40 to 100 gigabits were the stuff of research papers presented at technical conferences just a few years ago. But now these high-speed capabilities have come out of the lab, and OEMs are commercializing routers and switches for these applications. The technology should also become more affordable and offer substantive benefits for enterprise networks in a few years.

“Higher throughput reduces latency, enables virtualization, and offers a path to a unified network combining storage and data center traffic,” says Steve O’Donnell, an analyst and managing director at Enterprise Strategy Group. “Higher-speed networks also offer the promise of much greater simplicity into a small number of core switches. There are far fewer elements to manage and much greater resilience.”

Specifically, ultra-fast LANs will, in addition to better handling IP SANs and virtualization, make it easier for admins to handle network failures, O’Donnell says. “As an example, we might see a major power outage affecting one hall of our data center and the workload seamlessly migrating to another hall in the same site.”

O’Donnell believes these fast networks will especially benefit data centers in health, education, and government institutions. “These consumers of IT capacity have a need to operate at scale,” he says. “[Networks] with 10Gb speeds, for example, offer the opportunity to collapse and simplify the large blade environments that we have today into a large data center-wide fabric with resultant improved scalability and manageability.”

Networks with 10 Gigabit and faster speeds should also become more affordable for SMEs in the coming years as production of fast LAN equipment increases and components become more widely standardized,

says Robert Enderle, principal analyst for the Enderle Group. According to Enderle, very high-end optical routers that retail for \$10,000 or more now could go down in price by 60% within five years or less.

Single-Interface Network Monitoring

Keeping real-time tabs on your network and receiving alerts when things go wrong is crucial, yet admins have to rely on several different software systems to monitor what’s going on. In the future, single-interface monitoring should be available that incorporates all maintenance and management software, says Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com).

“There will be software that combines maintenance scheduling, tracking, costs, document storage, and real-time monitoring [for networks],” Petrino says. “Today, this must be done with multiple programs or manually,



so that, in the end, it does not hit the mark and information is missed.”

According to Petrino, improved monitoring and maintenance capabilities for networks will reduce downtime, outages, and costs. “This will offer relief for stretched capital budgets and save operational budgets, as well. In a down economy, these solutions will prove their value,” he says. “The complete solution is not in the market, but it is coming.”

Cross-Continent LANs

The concept of creating LANs that link data centers and enterprises over long distances usually conjures up direct-link fiber-optic networks that are far too expensive for most large organizations, let alone SMEs. As a result, users continue to face difficulties when attempting to send large files from one physical location to another over long

researchers say all-optical networks, routers, and switches could eventually replace electronics-based equipment one day, the technology’s adoption “is still in the early stages,” says Robert Enderle, principal analyst for the Enderle Group, who estimates that optical switches’ penetration in the market remains at less than 10% and is now geared for very high-end applications; however, it is expected to expand at a much faster rate as prices go down.

Key Points

- High-speed networks are becoming more widespread and standardized, removing some of the stumbling blocks to adoption.
- Single-interface monitoring makes it easier to maintain and secure your networks.
- Cross-continent LANs and Video over IP are changing the way far-flung employees interact.

distances. It is virtually impossible, for example, to email a 1GB file, and uploading and downloading large files from FTP servers can be a long process.

One way around the dilemma of connecting remote locations is through the use of WADS (wide-area data services) or WAAS (wide-area application services), which allow for LAN transfer speeds to be achieved over the Internet, regardless of the physical distance between locations. WADS or WAAS systems do this by reconfiguring the data packets associated with the TCP Ethernet protocol. Applications include a single Microsoft Exchange server that meets the needs of offices spread out across the United States or even overseas while eliminating the need to have email servers at every single location to serve each individual LAN. Very large files, such as videos and CAD drawings, can be transferred across long physical distances just as easily as they can locally over short LAN connections.

Although WADS and WAAS systems have been commercially available for more than a year, they are rapidly seeing adoption by mainstream IT operations and could meet the needs of any SME with remote locations in the near future by reducing the latency impact of WANs over the Internet, says Arun Taneja, analyst and founder of the Taneja Group.

“This whole nightmare of transferring very large files has been solved,” Taneja says.

Video Over The Network

Analysts first predicted decades ago that video communications would eventually become just as ubiquitous as traditional voice applications are. However, technology hiccups, lack of standardization, and other setbacks have limited IT networks’ adoption of the technology. But now, with the adoption of faster LANs, more power-efficient infrastructures, and standardized Video-over-IP protocols, video over enterprise networks is about to take off, says Kumar Srikantan, vice president of product management for Cisco (www.cisco.com).

“[Just as] momentum moved from [traditional landlines] to VoIP, rest assured that over the next 12 months, these black-and-white phones are all going to look like video phones. If I can take a video call on my phone, then I will take it,” Srikantan says. “Video got a bad rap in the old days, but what is happening is that 10 and 40 Gigabit Ethernet is driving very bandwidth-intensive yet real-time applications, like video.”

Real-time videoconferencing, which reduces travel costs by eliminating the need for face-to-face meetings; improved security and surveillance; and direct person-to-person communications are among the applications that will drive Video over IP’s adoption, Srikantan says. ■

Non-U.S. Citizen IT Pros Earn More, Study Shows

A recent study from two members of the Robert H. Smith School of Business at the University of Maryland indicates that non-U.S. citizen IT professionals earn on average 5 to 9% higher pay than U.S. workers possessing similar education and IT experience.

The findings from the “Does High-Skill Immigration Make Everyone Better Off? United States’ Visa Policies And Compensation Of Information Technology Professionals” from Sunil Mithas, assistant professor, and Henry Lucas, chair of the department of decisions, operations, and information technologies at the business school, conflict with arguments that temporary work programs, including H-1B and L-1 visas, propel employers to hire less-expensive foreign labor.

Mithas and Lucas analyzed compensation and job skill data related to 50,000-plus IT professionals who took part in salary-related surveys conducted from 2000 to 2005. The resulting findings indicate that employers tend to base financial rewards to noncitizen employees more on IT experience, while U.S. citizens’ pay premiums are based more on education levels. The findings “do shed doubt on the popular myth that foreign IT workers, on average, earn less,” says Mithas. “However, our findings are consistent with findings of other academic studies that use microdata and conventional labor economics models. Our findings are also consistent with some of the arguments in the literature that suggest complementarity among foreign and American workers.”

Factors In Premiums

Among noncitizen employees, the study indicates that those with green cards earn about 6.1% more than those with H-1B or other work-related visas. Additionally, Mithas suggests that intangible traits that foreign IT workers possess, such as broader global exposure, are a factor in the premiums doled out.

Just as American workers are likely to have a better understanding of the U.S. culture and business practices, foreign-born IT workers are likely to have a better understanding of their native cultures,

and that understanding can be leveraged by U.S. firms to their advantage to design and develop products and services for global markets,” Mithas says. “This is not to say that American workers cannot acquire skills to design and develop products for global markets. In fact, many business schools these days . . . have study-abroad programs that are designed to equip students with a better understanding of global markets and business practices.”

Mithas says the study suggests that firms should resist treating foreign and American IT professionals as “substitutes” and realize they can “benefit from their complementary skills to create new products and services for global markets.” He adds that a “culturally and globally diverse workforce, even if it comes at a higher price and means paying higher wages for foreign IT professionals, may prove highly effective in capitalizing on opportunities for leveraging foreign countries as sources or as markets for improved competitiveness.”

by Blaine Flamig

Most Promising Technology: All-Optical Switches & Routers

The concept of using optic—or light—signals to replace electronics in networking applications seemed like the stuff of science fiction just a few years ago. But the technology is beginning to see some adoption in very fast network applications, such as in switches and routers for 100 Gigabit LANs. Advantages for networking applications include signals that are literally as fast as light with significantly greater bandwidth compared to electronic signals. Although some

NETWORKING & VPN



Black Box Optinet helps enterprises control bandwidth costs, stop Internet threats, and increase employee productivity.

Ranges from \$2,279.95 for Optinet™ Standard Traffic Profile with 5Mbps for up to 250 Users (FE408005AA) to \$37,499.95 for Optinet 100% HTTPS Traffic Capable with 200Mbps for up to 20,000 Users (FE408200XA)

(888) 225-6921

www.blackbox.com/go/optinet

Minimize Non-Work-Related Internet Use

Black Box Optinet

Optinet™ from Black Box is a secure Internet gateway appliance that sits on your ISP broadband link between your corporate fire-wall and network. The convenient, powerful Web-based management console comes with everything you need to shape bandwidth, filter content, and eliminate threats.

Optinet enables you to focus your employees' Web browsing and Internet application use by allotting more bandwidth to mission-critical sites and applications. You'll know exactly how the Internet is used by your employees. Give users access to the content they need with real-time, dynamic URL categorization; URL database matching; URL keyword search; and even deep HTML inspection. Frequent, automatic reports protect your organization from emerging dangers on the Internet.

Optinet provides control in three ways: First, it enables application traffic monitoring so you can determine the appropriate priorities and limits. Second, you can set the

Internet policies and restrictions and automatically enforce them. Third, you can view detailed reports on use activity, application traffic, Internet threats, and more, giving you total visibility and enhancing your ability to identify and fix problems.

Additionally, protecting your company from existing and continually evolving online threats is a top priority. Optinet complements your firewall by providing hourly filter avoidance updates and dynamic content analysis that identifies and locks out dangerous anonymous proxies. Optinet also blocks malware and viruses with advanced database matching and client spyware removal capabilities.

Black Box offers a complete range of Optinet devices for any size of enterprise, government organization, school, or university.



NETWORKING & VPN



Citrix GoToAssist Express & GoToAssist Corporate allow companies to more quickly resolve technical issues with customers and end users.

GoToAssist Express: \$9.95 Day Pass; \$660 Annually; \$69 Monthly

(800) 549-8541

www.gotoassist.com

Provide Instant Online Tech Support

GoToAssist Express & GoToAssist Corporate

Lowering costs and increasing productivity are always at the top of a company's priority list. Citrix Online offers solutions that can not only increase productivity and save on costs, but also bolster customer satisfaction and company reputation.

The GoToAssist® Express™ remote-support solution allows individual users and small businesses to provide instant online technical support to their clients. Customers can quickly receive simple, Web-based technical support, which in turn increases their satisfaction with the company. In addition to improving call-resolution times, solving more problems online also saves on support and travel costs. GoToAssist Express lets businesses offer support to both Mac and PC users. With

GoToAssist Express, companies can sign up online and set up their service in just a few minutes.

For larger organizations, Citrix Online offers its GoToAssist® Corporate™ service. Companies can remotely support all end users, regardless of their location, and enable a special team collaboration tool to resolve complex issues that may arise. GoToAssist Corporate also features quick and secure access to remote systems, as well as built-in surveys and reports that help companies demonstrate quick ROI.



NETWORKING & VPN

Supporting Today's Most Demanding Cloud Computing Data Centers

Juniper EX8216 Modular Ethernet Switch

The EX8216 modular switch, a member of the Juniper Networks EX Series of Ethernet switches, delivers the performance, scalability, and high availability required for today's high-density cloud computing data centers, campus core, and Internet exchange environments.

A member of the Juniper EX8200 line of modular switches, the 16-slot EX8216 offers a high-density, high-performance platform for aggregating access switches deployed as data center top-of-rack or end-of-row devices, as well as for direct-connect Gigabit Ethernet server access in data center end-of-row deployments. The EX8216 switch scales to a capacity of 12.4Tbps (terabits per second) and delivers about 2 billion packets per second of wire-speed 10 Gigabit Ethernet at all packet sizes, making it highly scalable.

To maximize network investments, the EX8216 leverages the same EX8200 wire-speed line cards and power supplies used by the eight-slot EX8208 modular switch, ensuring consistent performance across the entire product family. In addition, the EX8200 line, along with the EX3200 and EX4200 switch lines and Juniper routers and security services gateways, all run the same JUNOS® Software OS and are managed by a single application, NSM (Network and Security Manager).

The EX8216 modular switch also includes an advanced set of hardware features enabled by the Juniper-designed EX-PFE2 ASIC. Working in conjunction with JUNOS Software, the EX-PFE2 ASICs on each line card deliver the scalability needed to support high-performance data center networks.



The 16-slot EX8216 modular Ethernet switch from Juniper Networks delivers platforms for supporting today's most demanding cloud computing data centers.

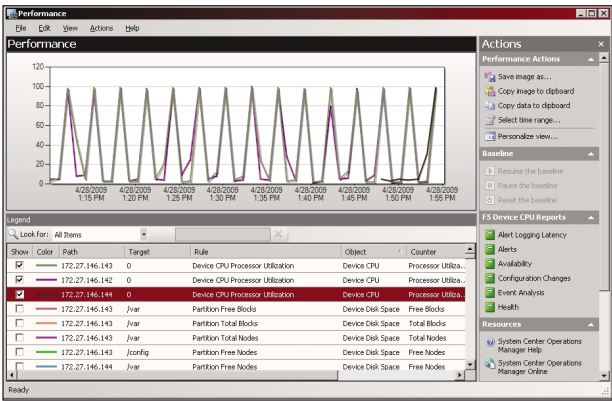
Base pricing for the EX8216 modular switch begins at \$76,000.

(866) 298-6428

www.juniper.net



NETWORKING & VPN



F5's Management Pack for Microsoft System Center Operations Manager 2007 is a plug-in that lets users monitor resources and maintain optimal performance through insight into changing infrastructure.

Available as a free download through F5's DevCentral

(888) 882-4447

www.f5.com

See More & Do More

F5 Management Pack For Microsoft System Center Operations Manager 2007

As a Microsoft System Center Operations Manager 2007 user, visibility into the state of the IT environment is of paramount importance. But if changing infrastructure and resource management are blurring your vision, F5 has just what you need. The F5 Management Pack for Microsoft System Center Operations Manager 2007 is a software plug-in that lets Microsoft and F5 customers allocate dynamic network, application, and server resources on the fly by monitoring and automating responses

to user demand and resource availability.

The F5 Management Pack plug-in monitors the performance of network devices, application traffic, and other components of the network infrastructure and can automatically adapt to changing network conditions to keep performance up. It features F5's customizable iRules scripting language and PowerShell-enabled iControl API, which dynamically brings new servers online and offline, gives priority to critical traffic when sudden

traffic bursts occur, filters out undesired traffic, provides software updates to individual servers without negatively affecting performance, and manages complete delivery of all applications from a single console. The F5 Management Pack is designed to work best with System Center Virtual Machine Manager, Hyper-V, and other Microsoft offerings.



MESSAGING & TELEPHONY

Recovery For OST Files

DataNumen Advanced Exchange Recovery 2.0

There are many hardware and software reasons, including server crashes or malicious software, that can make offline storage (.OST) files inaccessible. But such files still contain your mail messages and other items of your mail account that you may need. With DataNumen's Advanced Exchange Recovery 2.0, you can recover as much data as possible and save it as Outlook files.

Advanced Exchange Recovery 2.0 makes it easy to retrieve the contents of your mailbox, recovering mail messages, posts, folders, notes, appointments, contacts, and other mail account items from OST files and saving them as Outlook .PST files. Message properties (subject, date, to, from, etc.) and subobjects (attachments, embedded objects) are also recovered.

Because of a byte-level scan performed by an advanced algorithm, the program recovers all possible items in OST files. And it works where other similar solutions fail.

Advanced Exchange Recovery includes the ability to recover password-protected OST files or deleted items in OST files and OST files on any corrupted media. Plus, it can recover mail messages in plain text, RTF, and HTML format.

Other features include:

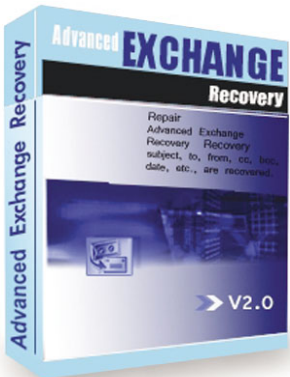
- Ability to convert Exchange OST files to Outlook PST files
- Support for Exchange Server 2007 and Outlook 2007
- The ability to recover and split oversized OST files
- Batch recovery
- Search features to find OST files on the local PC

DataNumen Advanced Exchange Recovery 2.0 makes it easy to retrieve the contents of your mailbox and save them as Outlook files.

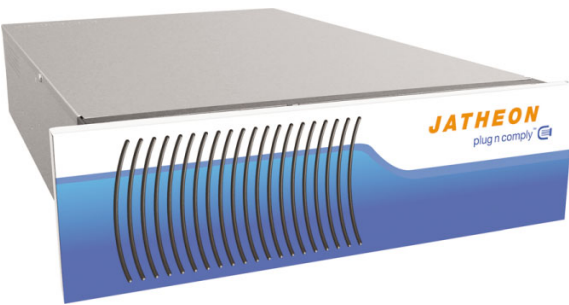
\$249.95 (single-user license)

(800) 998-8826

www.datanumen.com



MESSAGING & TELEPHONY



Jatheon Plug N Comply is an email archiving solution that helps companies enhance operational efficiencies, reduce physical storage, and meet government compliance regulations.

Starting at \$4,995

(416) 840-0418

www.jatheon.com

Efficient Email Archiving

Jatheon Plug N Comply

Most companies need a more efficient email archiving system that lets employees store an ever-increasing number of emails and attachments without upsetting overall server performance. Jatheon's Plug N Comply family of appliance-based email archiving solutions can reduce physical storage; enhance operational efficiencies; and meet government compliance regulations such as Sarbanes-Oxley, SEC, NASD, and Federal Rules of Civil Procedure.

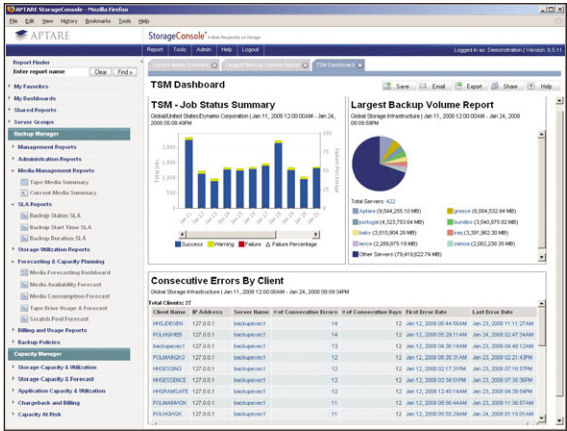
Plug N Comply uses a single point of access to capture, index, and store emails and instant messages, and any included attachments, simplifying compliance and electronic discovery. Physical storage is reduced by migrating email data to the archive, so employees aren't required to spend hours managing their mailbox to ensure they don't exceed company quotas.

Each Plug N Comply appliance is tailored especially for small, medium, or large enter-

prises across all industries or for government or educational institutions. This, according to Jatheon, makes the best solutions available to users at all levels, fitting both a company's price and performance needs. For example, the PnC 100 is designed for organizations with fewer than 200 employees and features a single Intel E5200 2.5GHz dual-core processor, 2GB DDR2 RAM, and a 500GB hard drive. For the most demanding organization, the PnC 6000 boasts two Intel Xeon E5400 2.5GHz quad-core processors, 8GB RAM, and 1TB of hard drive space. Storage availability in Jatheon's newest-generation Plug N Comply appliances ranges from 700GB to 27TB. With Jatheon's range of Plug N Comply appliances, any company is sure to find the email archiving solution that meets its needs.



STORAGE



APTARE StorageConsole 7.0 is a virtualization management product line for enhanced platforms, replication, and backup

\$1,495

(408) 871-9848

www.aptare.com

Increase Control Over Storage Resources In VMware & NetApp Environments

APTARE StorageConsole 7.0

In-depth data storage reporting is critical to efficient operations of any server environment, especially when performance and business continuity is of the utmost importance. APTARE released the most recent version of its StorageConsole solution to provide increased functionality and operational control with storage environments. The newly featured StorageConsole 7.0 platform incorporates proactive alerting, customized report templates, enhanced filtering, improved navigation, and drag-and-drop server group management.

The APTARE StorageConsole 7.0 includes both the new StorageConsole Virtualization Manager and StorageConsole Replication Manager; the existing StorageConsole Backup Manager and Capacity Manager now operate with the latest features. Storage Console Backup supports VCB (VMware Consolidated Backup) for NetBackup and now includes a custom backup interface. StorageConsole Capacity Manager supports all IBM DS/ESS storage arrays in addition to Hitachi dynamic provisioning.

StorageConsole Virtualization Manager

The benefits of the Virtualization Manager are threefold: improved planning, increased performance, and expanded storage. New planning procedures will help allocate storage space within the virtual environment. Optimized performance levels support the correct storage tier for an environment's physical resources.

StorageConsole Replication Manager

Replication Manager is compatible with NetApp SnapVault, NetApp SnapMirror, and NetApp FlexClone. As the manager conducts success, partial, and failure identification, it seeks the root cause of failures. Management mapping lets you view replication tasks and clears out out-of-day volumes.



STORAGE



Barracuda Backup Service
Integrates Local & Secure Offsite Backup For Disaster Recovery

Starts at \$49 per month

(888) 268-4772

www.barracuda.com/backup



Get Onsite & Offsite Backup

Barracuda Backup Service

The Barracuda Backup Service is an affordable, integrated local and offsite data backup and disaster recovery solution that combines an onsite appliance with a monthly subscription that replicates data to two offsite locations. Combining local and offsite storage provides the best of both worlds—onsite backups for the fastest restore times and secure, offsite storage for disaster recovery.

Designed for organizations of any size, the Barracuda Backup Server creates a local copy of data and efficiently transfers the data offsite without any additional burden on production servers. Offsite storage is monitored and managed by Barracuda Central as part of the Barracuda Backup Subscription, and tech support and emergency restores are included, as well.

Deployed in varied, complex IT environments, the Barracuda Backup Service protects mission-critical business information, utilizes industry-standard networking protocols to access data for backup, and is compatible with all major operating systems.

The Barracuda Backup Service Web control panel makes it easy to manage and back up data to multiple units at one or more locations—from anywhere. It also provides control of settings, reports, restores, statistics, and account information in order to manage Barracuda Backup Servers and Barracuda Backup Subscription plans. In addition, customers receive automated alert notifications via the Web control panel when conditions affecting backup service are detected.

SECURITY



The ArcSight Express family is designed for enterprises that may not have the IT resources to staff a full security center.

\$45,000
(408) 864-2600
www.arcsight.com

The Security Expert In A Box

ArcSight Express

Networks are never immune to the onslaught of security threats. They will remain vulnerable unless enterprises take safeguarding steps through incident detection, automated notification, and real-time alerts. ArcSight has released a compliance and security monitoring solution for SMEs that want to address vulnerabilities that could leave the network susceptible to hackers, viruses, malware, data breaches, and identity theft.

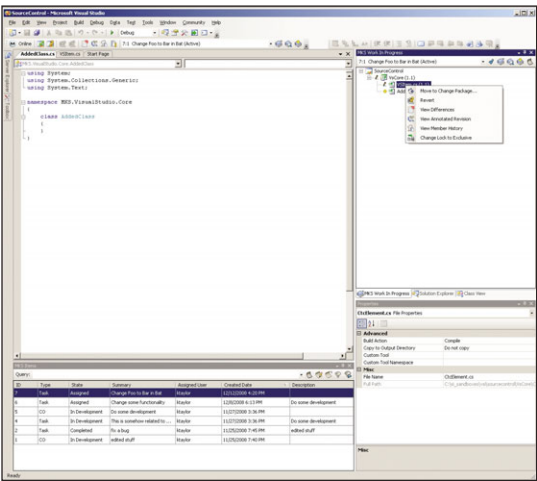
The ArcSight Express family is designed for enterprises that may not have the IT resources to staff a full security center. To protect the company infrastructure, ArcSight Express implements protective rules, alerts, and reports via graphical console or rule builder to defend the network against the following threats: bots, worms, viruses, bandwidth hogs, policy violations, unauthorized application access, network errors, and VPN and sneak attacks. ArcSight Express is also

aware of database monitoring (errors and warnings), as well as server and desktop monitoring (denied connections, IPS/IDS alerts, and successful/failed login). Overall, common controls are practical for multiple regulations such as Sarbanes-Oxley, PCI DSS, Gramm-Leach-Bliley, FISMA, Basel II, and HIPAA.

ArcSight Express supports the ArcSight SmartConnector family, which gathers data in its native state to normalize it into a correlation and analysis format. The appliance family features four configurations: the M7100-M, M7100-L, M7100-X, and L3000 with a 2 x 10/100/1000 interface. Each has up to 10:1 compression and can sustain unlimited Web users.



CLIENTS



MKS Integrity drives unified ALM (application lifestyle management) for Visual Studio IDE and heterogeneous environments.

(800) 613-7535
www.mks.com

New Integration Supports Unified ALM Collaboration & Productivity

MKS Integrity

Automation is critical to the regulation of common tasks. This enables developers to carry out policy and time management with greater efficiency. As development solutions transform the pace of automation cycles, it's important to practice safe development through proper ALM (application lifecycle management) operations.

MKS Integrity delivers collaboration, productivity, and traceability into the Visual Studio IDE. Unified ALM gives development teams the ability to track in-progress change without serializing work. Task-based change management with MKS

Integrity (including change package support) enables developers to appropriately manage or avoid conflicts that could waste time and energy. A solution registry and sharing wizard streamlines work with Visual Studio solutions, enhancing their visibility and utility across the entire development organization.

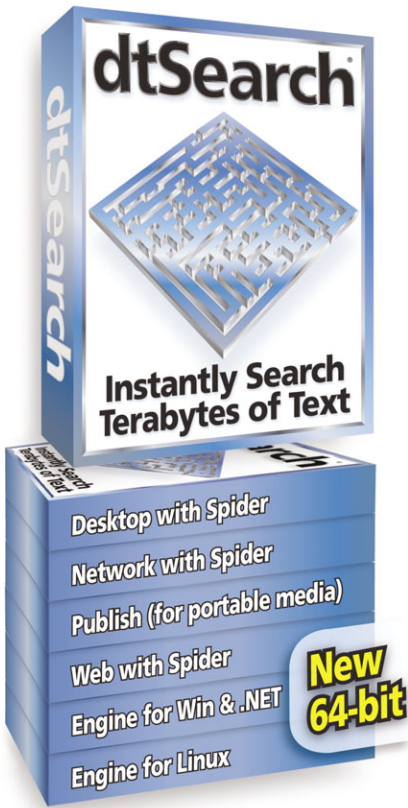
Both "pure" Visual Studio IDE shops and organizations with heterogeneous development environments can benefit from enhanced integration with MKS Integrity. A unified ALM data model coupled with the superior integration opportunities provided by the VS SDK enables Visual Studio shops to

go beyond simple configuration management; they can achieve more complete traceability and control development from requirements through testing and deployment.

Task-oriented development workflow supported by configurable business rules (including non-exclusive locks) and full audit trails in MKS Integrity allows teams in the Visual Studio IDE to achieve enterprise-class control over development processes while mitigating risk and ensuring compliance with governance and regulatory requirements.



CLIENTS



- dtSearch products have received hundreds of excellent press reviews.
- The dtSearch Web site also has hundreds of developer case studies posted at www.dtsearch.com.

dtSearch Version 7.6 releases cover both developer products, with new expanded sample code for use with Microsoft's most recent Visual Studio version, and enterprise products, with updates to the user interface.

(800) 483-4637 (800-IT-FINDS)
www.dtsearch.com

The Smart Choice For Text Retrieval® Gets Better

dtSearch Version 7.6 Releases

Extend 64-Bit Capabilities In Enterprise, Developer Products

dtSearch, a leading supplier of enterprise and developer text retrieval software, has extended its 64-bit product line. The new release covers both dtSearch's enterprise and developer products, including native 64-bit versions. For the developer products, the new release provides expanded sample code for use with Microsoft's most recent Visual Studio version. For the enterprise products, the new release updates the user interface, providing a greater selection of "look and feel" options for users.

The Version 7.6 release includes:

dtSearch Desktop with Spider, which instantly searches files on a PC, and **dtSearch Network with Spider**, which searches across a network. Both instantly search and display, with highlighted hits, a variety of file types, including email messages along with the full text of email attachments. Through the Spider, both applications can also add Web content to a local or network search.

dtSearch Web with Spider quickly publishes a large volume of instantly searchable data to an IIS Internet or intranet site. dtSearch Web works as a point-and-click solution, with no programming required. The Spider provides integrated support for local and remote Web site data.

dtSearch Publish lets users easily publish instantly searchable document collections or Web site content to portable media such as CDs, DVDs, and external hard drives.

The dtSearch Engine lets developers add dtSearch functionality to 32-bit and 64-bit applications. The **dtSearch Engine for Win & .NET** supports C++, Java and .NET, including a .NET Spider API. The new release provides expanded sample code for use with Microsoft's most recent Visual Studio version. The **dtSearch Engine for Linux** supports C++ and Java.

The dtSearch product line features:

Terabyte Indexer. dtSearch products can index more than a terabyte of text in a single index. They can also create and simultaneously search an unlimited number of indexes. Indexed search time is typically less than a second, even across terabytes of data.

File formats and databases. dtSearch products include integrated file parsers and

converters for a wide range of popular file types. dtSearch products display existing Web-ready content (HTML, PDF, XSL/XML, etc.) with highlighted hits, and with all images, links, and formatting intact. For other file types, such as MS Office, OpenOffice, and ZIP, built-in proprietary converters render these document types as HTML, with highlighted hits, for display in a Web browser. The dtSearch Engine includes a data source API for indexing SQL-type databases and other non-file data, including BLOB data.

Spider. The dtSearch Spider adds local or remote Web site content to a searchable data collection. The Spider supports public sites, intranets, HTTPS, password-accessible sites, and forms-based authentication sites. The Spider supports both static and dynamic Web-based content, including ASP.NET, PHP, MS CMS, and SharePoint, indexing to any level of vertical or horizontal depth. dtSearch products support integrated searches of local and remote content, including WYSIWYG hit highlighted display of Web-ready data.

Search features. Full-text and fielded data search options include: distributed or federated search options with integrated hit-highlighted display, fuzziness adjustable from 0 to 10 (to sift through typographical and spelling errors), synonym/concept/thesaurus (through a built-in thesaurus and/or user-defined synonym rings), Boolean (and/or/not), phrase, phonic, wildcard, bilateral proximity, directed proximity, stemming, natural language/vector-space relevancy ranking, variable term weighting, positional scoring, field-based relevancy ranking, data classification and filtering objects, numeric range searching, advanced date recognition, unindexed search (in addition to indexed search), and special forensics search options (text filtering of forensically-recovered data, credit card search, email search, etc.).

International language support. Built-in Unicode support covers hundreds of international languages (including right-to-left languages and Chinese/Japanese/Korean character processing options).



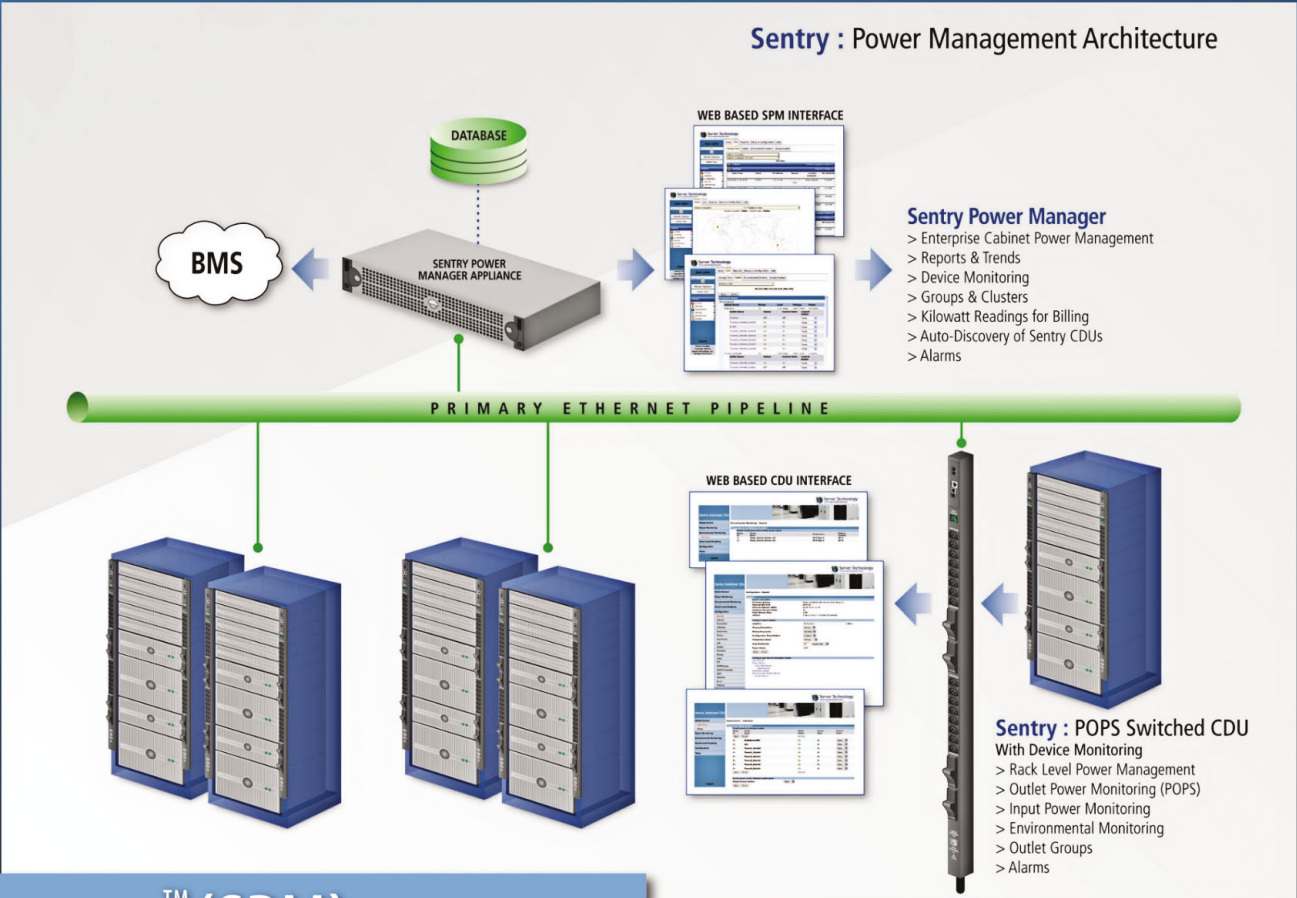
How Do You Measure the Energy Efficiency of Your Data Center?

> **Sentry POPS**

Measure and monitor power information per outlet, device, application, or cabinet using Web based CDU Interface

> **Sentry Power Manager**

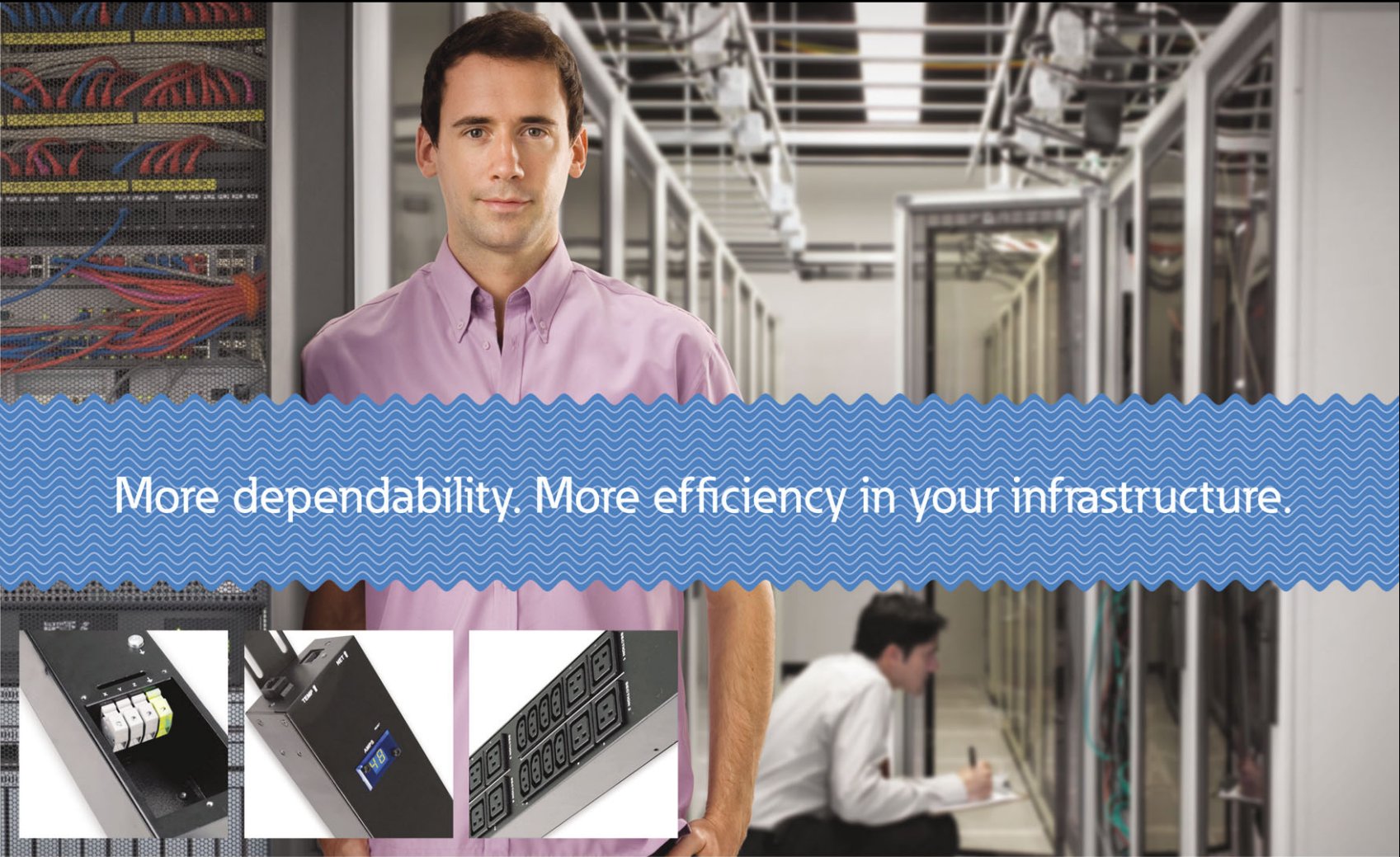
- Secure software solution which allows:
- > Monitor, manage & control multiple CDU's
 - > Alarm management, reports & trending of power info
 - > ODBC Compliant Database for integration into your Building Management or other systems
 - > kW & kW-h IT power billing and monitoring information per outlet, device, application, cabinet or DC location



With Sentry Power Manager™ (SPM) and Sentry POPS™ (Per Outlet Power Sensing)CDU's!

Green IT Solutions for the Data Center Equipment Cabinet

 **Server Technology**
tf 1.800.835.1515 www.servertech.com
tel 1.800.284.2000 sales@servertech.com



Eaton ePDU® makes selecting Enclosure Power Distribution Units easy

Uninterruptibility from Eaton® isn't a new offering. It's an iron-clad promise, backed by a \$13B global organization and a century-long heritage with power protection, distribution and management expertise.

Eaton's expanded ePDU® portfolio of power distribution units offers the broadest range on the market. Making the right decisions from the start can make a difference in the dependability and efficiency of your infrastructure.

Use our new product configuration wizard to search over 1,000 products for the perfect solution. Tailor your ePDU to include a wide range of voltages using various combinations of NEMA and IEC outlets and plugs.

Visit the product wizard to meet your power distribution challenges and **power through**.

www.epdu.com/prsnws
(877) 785-4994

EATON
Powering Business Worldwide

PRODUCT SHOWCASE

Find Out about the Blanking Panel that Delivers Even More than You Asked For—Easy to Install, Ergonomic, and Most Effective at Cabinet Cooling Optimization

Upsite Technologies
(888) 982-7800
www.upsitetechologies.com



ONE OF THE LATEST product innovations for optimizing energy efficiency in the data center is the HotLok® Blanking Panel from Upsite Technologies. It took Upsite six months to research market needs, four months to understand the science, and over a year to develop and manufacture the product.

And the HotLok product meets the market need: It's a tool-free product with ergonomic finger grips that prevents internal equipment exhaust air from being sucked into the conditioned air-intake stream at the front of the cabinet. Because it was designed and manufactured for the market, it is no wonder that the HotLok Blanking Panel won the Gold Award in the infrastructure category in TechTarget's SearchDataCenter.com "2008 Product of the Year" Awards.

HotLok Blanking Panels are just one of the award-winning, highly engineered air-flow solutions for the data center, designed and developed by the engineers at Upsite Technologies. Cool IT equipment more efficiently, increase reliability, save energy, and lower operating costs with these data center optimization solutions: HotLok and KoldLok® products and Upsite® Services.

Find out more about designing the ultimate Blanking Panel from the Upsite research and development team:

Q Tell us about designing and developing the HotLok Blanking Panels?

A To begin, Upsite Technologies developed and manufactured the HotLok Blanking Panel designed to improve site uptime, reduce operating expenses, avoid capital outlays, and reduce the data centers' environmental footprint. During the concept and development stages, we apply good science, innovative engineering, and elegant industrial design to create high value for our family of optimizing products.

Q What did your market research teach you?

A The market wanted an effective product that provided a seal preventing hot equipment exhaust from circulating from the back to the front of the cabinet. HotLok eliminates the mixing of the hot exhaust air with colder conditioned air from the perforated floor tiles or grates. If this mixing occurs, temperatures entering the equipment air-intake can exceed the ASHRAE-recommended maximum, causing air-intake temperatures to rise, hot spots to emerge, and equipment to become less reliable.

Q What kind of testing did you perform to verify the challenges with recirculating hot exhaust air?

To examine the science, we commissioned an independent third-party organization (Innovative Research) to develop a two-dimensional computational fluid dynamics (CFD) model of air recirculation within a typical high-density equipment cabinet. We were surprised by some of the results from the CFD model. One result was that if there

is a slight gap of even 1/16th inch (1.6 mm) between the blanking panels, as much as 15 to 20 percent of the air-intake volume can be from recirculated hot equipment exhaust air.

Another result was that the maximum average temperature at the air intakes under this condition was 16°F (8.8°C) higher than those with no leaks between the blanking panels. The CFD model under this condition also showed that the top server in the cabinet with small gaps between the blanking panels experienced a maximum temperature of 90°F (32.2°C). The same top level server in the cabinet with no gaps between the blanking panels experienced a maximum temp of 60°F (15.6°C), which is a favorable difference of 30°F (16.2°C). Most troubling of all, the two-dimensional CFD model analysis of the air-flows showed that when hot exhaust air recirculation occurs within a cabinet, installing higher-flow perforated floor tiles or grates, reducing cooling unit set points, or installing additional cooling capacity may not reduce the server air-intake temperatures. With this data, the team was motivated to develop a near-perfect, cost-effective seal that would deliver operating and economic benefits.

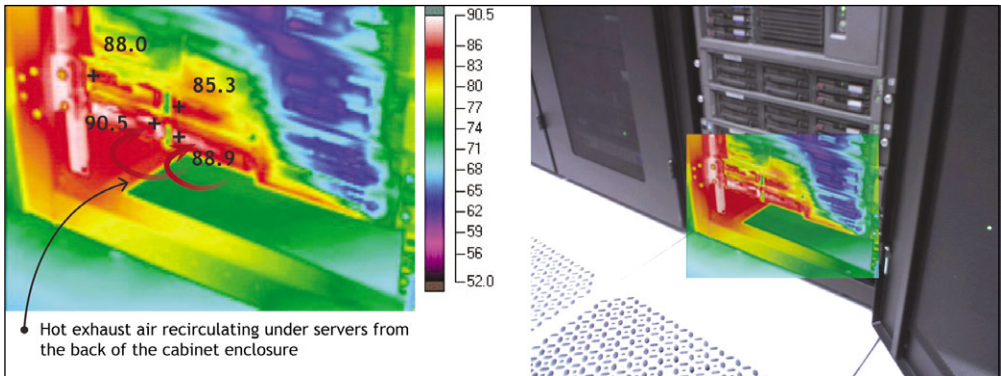
Q What else did you learn from the market?

A The market also asked for tool-less installation and removal. We did this and also created an ergonomic snap-in design.

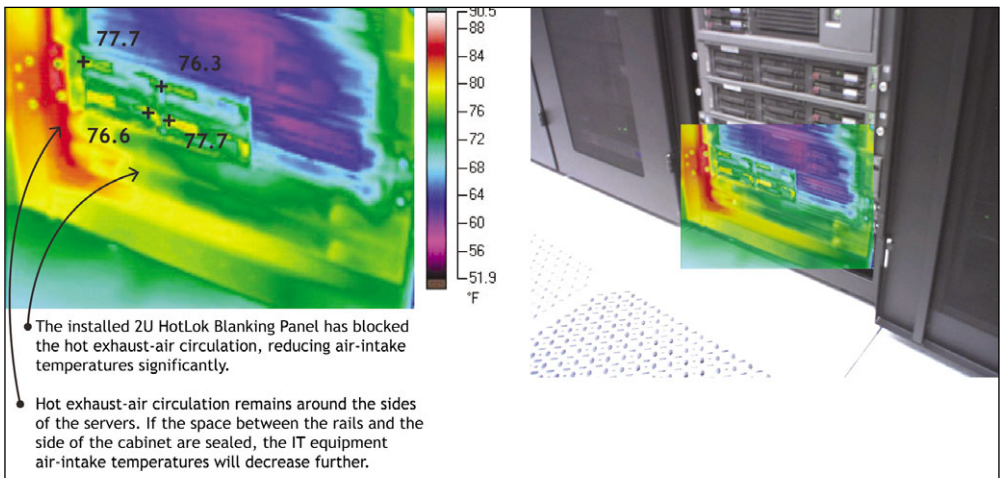
we created in-board finger holes that allow a user to install and remove HotLok Blanking Panels safely and comfortably from any location, bottom to the top, in the cabinet. The benefits of this are lower labor costs, fewer minor injuries with increased user satisfaction, and aesthetically attractive cabinets.

Q What do data center managers need to know about the product?

- 99.97% effective seal; highest currently in the market
- Snap-in design that facilitates tool-less installation and removal. Its unmatched ergonomics help to reduce installation and removal time, eliminate minor injuries, and increase user satisfaction.
- Fits all standard mounting rail openings for 19-inch rail widths specified in EIA-310-E
- Stackable to provide convenient, close-at-hand storage which eliminates the need for particulate-emitting corrugated containers in the computer room
- Aesthetically pleasing
- Both durable and lightweight for long life and lower shipping costs
- Optional liquid crystal thermometer on the face of the Blanking Panel, the Upsite® Temperature Strip (won the TechTarget's SearchDataCenter.com "2007 Product of the Year" Gold Award in the data center cooling category) reliably and inexpensively helps data center



Infrared image of cabinet base five minutes before installation of the 2U HotLok Blanking Panel



Infrared image of cabinet base five minutes after installation of the 2U HotLok Blanking Panel

Removal can be awkward and time-consuming with other blanking panels as a user must squeeze his hands and fingers into the ends of the blanking panel and work in a confined space at the edges of the rail and cabinet opening. Repetitive stress and minor physical injury, including broken fingernails and scraped knuckles, often result. In addition, significant force may be required to remove the blanking panel. After ergonomic analysis and study (evaluating eight design concepts),

managers monitor air-intake temperatures at different points in the IT cabinets

- HotLok Blanking Panels and all packaging are RoHS compliant, recyclable, and made of resins that are UL-Recognized with a V-O flame rating, UL File Number E56070.

Q Why should data center managers purchase this product?

A Quite simply, because HotLok Blanking Panels work extremely well and are

priced competitively. They meet all the known customer needs, most important of which is providing an effective seal. This single feature alone will eliminate hot exhaust air recirculation, reduce hot spots, stabilize equipment air-intake temperatures, and provide potential significant savings in labor and energy costs. And the easy installation gives the data center managers a durable panel to move when retrofitting and reconfiguring the computer room.

Q How does the HotLok product lower the carbon footprint in data centers?

A Left unchecked, any recirculated hot exhaust air from equipment in the IT cabinet raises the temperature at the equipment air intakes. If the intake air exceeds the ASHRAE-recommended maximum, hot spots can result and the equipment can become less reliable. A typical response is to reduce the set point on the cooling units and/or to increase the amount of air (e.g., run more cooling units and fans), which consumes more energy and increases the carbon footprint of the data center. HotLok Blanking Panels reduce or eliminate hot exhaust air recirculation in IT equipment cabinets. Therefore, all the air entering equipment air intakes is conditioned at a stable temperature very close to the temperature of the air supplied through the perforated floor tiles or grates. With this condition, set points can be raised and the amount of conditioned air and number of fans can be adjusted to reduce energy consumption in the data center.

Using less energy reduces the carbon footprint of the data center. Given the large amount of energy consumed in a data center to provide cooling and the typical over-capacity of cooling (as a percentage of total energy to run the data center), a small change in the temperature or volume of air can mean significant energy savings and reduction of the carbon footprint.

Q Why is the stacking feature of the HotLok solution important in a data center?

A Each HotLok Blanking Panel is engineered to snap into and stack on top of another unit. It is possible to stack 10 1U or 20 2U HotLok Blanking Panels. As a stack, HotLok Blanking Panels can be stored on convenient, open shelves for ready availability, which reduces labor costs. There is no need to store them in corrugated boxes or other containers. The Uptime Institute (authors of the Tiers Classification System for data centers) recommends avoiding corrugated containers in a computer room, because they emit particulates that may create air filtration and air contamination problems. ASHRAE reinforces this best practice, published in its standard regarding the particulate matter that a typical computer room can handle. We are not aware of any other plastic blanking panel that offers the tool-less installation feature and the option of stacking. [E]

View Upsite IT cabinet recirculation webinar to discover the impact of IT cabinet recirculation on energy efficiency and how to start lowering your energy bill immediately. View *The Impact of Airflow Circulation in IT Cabinets and Best Practices to Improve Reliability and Energy Efficiency* at upsite.com/airflowwebinar.

PHYSICAL INFRASTRUCTURE

Switched CDU CW-24V2



Power cycle individual or groups of outlets to remotely reboot network devices.

- 208V to 240V Single or 3-Phase power at 20 or 30A
- Access and Security: Web interface, SSL, SSH, Telnet, SNMP, LDAP, TACACS+, and RS-232 access
- Environmental Monitoring
- Fuse Retractor
- High-Density 24 IEC C13



Server Technology Inc.
(800) 835-1515
www.servertech.com

PHYSICAL INFRASTRUCTURE



Cisco ASA5505 19" Rack Mount Kit

Custom Designed Rack Mount for the Cisco ASA5505

- Fits into a 1.25U space
- Power supply is securely fastened to the mount
- Keep your rack tidy and neat!

More rack mount kits available at
www.cablesandkits.com



cablesANDkits.com
(888) 622-0223
www.cablesandkits.com

PHYSICAL INFRASTRUCTURE

CS-3AVY Sentry Smart CDU



Provides reliable 3-Phase power distribution. Multiple outlet types distribute multiple voltages via 3-Phase 208V Wye power in-feed.

- High Density
- Multiple Voltage Outputs
- Input Current Monitor
- IP Access & Security
- SNMP Traps
- Environmental (Temperature & Humidity) Monitoring
- Branch Circuit Protection
- **NEW!** Linking for Smart CDU (Expansion Modules)



Server Technology Inc.
(800) 835-1515
www.servertech.com

PHYSICAL INFRASTRUCTURE

Snake Tray® Cable Management & Power Distribution

Designed To Reduce Construction Costs!



Cable Management

- Built-in mounting hardware
- Integrates with access floor or mounts directly to the subfloor

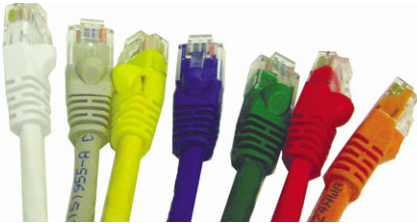
Power Distribution

- Modular energy-efficient bus bar technology
- Power and data distribution boxes



Snake Tray
(800) 308-6788
www.snaketray.com

PHYSICAL INFRASTRUCTURE



Cat5E And Cat 6 Cables

We're more than a Rackmount Company! A complete line of Cat5E, Cat 6 cables, including excellent bulk pricing.

- Cat5E patch and Cat 6 patch panels; Fiber Optic Cable
- Molded, snagless, strain-relief booted patch cables
- Custom cable assemblies
- Cat5E and Cat 6 bulk UTP network cables
- SVGA super monitor cables and VGA extenders



Rackmount Solutions Ltd.
(866) 207-6631
www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE



Low Profile 19" Server Rack Cabinet

Great for POS Applications or wherever you have small space requirements

- Available in variety of sizes: From 3U-25U
- Usable cabinet depth from 22.5"D to 34.5"D
- Universal rack rails fit all major brand servers
- TTSC Series shown

Visit: www.iscdfw.com for the Processor special
• 10% off all sizes with coupon #PMLPT09



Information Support Concepts Inc.
(800) 458-6255
www.iscdfw.com

PHYSICAL INFRASTRUCTURE



CoolCube 10

RACK IT - STACK IT - MOUNT IT - HANG IT

Tired of Overheated Server Rooms? The CoolCube 10 Offers an Exceptional Cooling Solution for Electronics

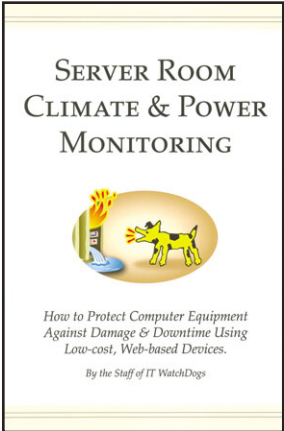
- 50% smaller than competitors, provides 10,000 btu/hr
- Installs into any 2- or 4-post 19" rack or is portable in room
- Automatic restart function for power outages
- Cost-effective for after-hours and weekend cooling
- Uses standard 115 VAC power source



Rackmount Solutions Ltd.
(866) 207-6631
www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE

Climate & Power Monitoring Book



Server Room Climate Worries?

GET OUR FREE BOOK

- Read about the \$150,000 thermostat
- Useful information to protect your server room
- Monitoring techniques
- Heat: the big problem
- Water and unwanted visitors
- Where to place your sensors
- Things to avoid

freebook@itwatchdogs.com



IT Watchdogs
(512) 257-1462 ext 537
www.ITWatchdogs.com

PHYSICAL INFRASTRUCTURE

CS-27V Sentry Smart CDU



Provides reliable power distribution. Use one IP address across different power circuits.

- High Density
- Multiple Voltage Outputs
- Input Current Monitoring
- IP Access & Security
- Alerts for Power & Environmental Conditions
- **NEW!** Fuse Retractors for Branch Circuit Protection
- Environmental (Temperature & Humidity) Monitoring
- **NEW!** Linking for Smart CDU (Expansion Modules)



Server Technology Inc.
(800) 835-1515
www.servertech.com

PHYSICAL INFRASTRUCTURE



MicroGoose Climate Monitor

Low-Cost MicroGoose Climate Monitor with PoE

- \$199—Low-cost Web server
- Small, fits anywhere
- Temperature & Humidity Sensor built-in
- Power over Ethernet (PoE)
- Multiple alarms per sensor
- 1-Year Warranty/30-Day Money Back Guarantee



IT Watchdogs
(512) 257-1462 ext 537
www.ITWatchdogs.com

PHYSICAL INFRASTRUCTURE

UCoustic™ Sound Proof Enclosures



The way a cabinet should sound.

28.DBa Sound Reduction

- 24U & 42U dissipates 7.2kW of heat as well as up to 28.DBa sound reduction
- Reduces equipment noise to whisper level
- Universal square mounting holes



Rackmount Solutions Ltd.
(866) 207-6631
www.rackmountsolutions.net

Find it at Black Box.



Products

118,000+ products including cables, cabinets, racks, KVM, networking, multimedia, and more.

Support

FREE, live, 24/7 help in less than 20 seconds.

Service

Same-day shipping.

Get your FREE, 620-page Black Box® Catalog filled with the latest infrastructure and networking products.



blackbox.com/go/pro | 888-225-6921

PRODUCT RELEASES

Do you have a new product
that data center/IT managers would
be interested in learning about?

Send your press release or related product information to press@processor.com.

CLIENTS

■ Acreesso Software InstallShield

Acreesso Software updated its InstallShield with a capability that allows the development of applications in the Microsoft App-V (Application Virtualization) format. Acreesso gives developers the ability to create applications in both traditional and virtual formats so enterprises can quickly take advantage of virtualized software and reduce management costs. This edition also lets developers create a new project or convert an existing project to the App-V format. InstallShield support for App-V complements Acreesso's Admin-Studio support for App-V, which gives enterprise system administrators the ability to convert applications to the App-V format. Enterprises can combine developer efforts using InstallShield with efforts by system administrators using Admin-Studio to move an organization's application portfolio to the App-V format quickly while also saving on migration costs.

■ Igel Technology Igel One

Igel Technology announced the Igel one, a low-entry thin client designed for environments with up to 250 users. Customers can choose from five different protocols for the Igel one, and the supported server-based computing solutions include Citrix XenApp, Microsoft Terminal Services, Ericom PowerTerm Webconnect, Cendio ThinLinc, and No-Machine NX. The Igel one is made to be cost effective, and it's ideal for companies wanting to deploy terminals for centralized application delivery, such as office-based programs.



■ Kofax Monitor

Kofax released Kofax Monitor, a module offering real-time enterprise-level monitoring and metrics aimed at providing the company's software with better performance, more cost savings, and higher efficiency and return on investment. The monitor uses a dashboard and graphics to examine system components, access service viability, and provide real-time access to operational data via Windows or mobile device browsers. Features include detect-and-notify capabilities to isolate system errors immediately and alert personnel via configurable notifications sent via email, pager, SMS, RSS, SNMP, and other formats. A detect-and-correct function automatically handles common error situations, including a hung server, through a reboot or restart of a system, application, or process.

■ OKI Printing Solutions RT322 Series

OKI released the RT322 series of thermal POS (point-of-sale) receipt printers for two-dimensional barcode output. Primary features include 203 dpi print quality, 150mmps print speeds, small physical footprint, drop-and-print accessibility, direct thermal printing technology, and multiconnectivity interfaces (parallel, serial, high-speed



USB, or network). The RT322 series starts at \$261.

■ Oracle Customer Hub 8.1

Oracle announced the latest version of its master data management solution, Oracle Customer Hub 8.1. Oracle Customer Hub 8.1 is designed to enable organizations to consolidate customer data from disparate systems and then cleanse, master, govern, and share the information throughout the enterprise. Features include a set of composite Web services to help speed SOA (service-oriented architecture) enablement; support for out-of-the-box integration with Oracle's Siebel CRM and Oracle E-Business Suite through Oracle Application Integration 2.3; and updates to Siebel CRM and Oracle E-Business Suite to make them MDM Aware, which lets the applications interact with outside master data sources. Oracle Customer Hub 8.1 also includes usability and implementation speed enhancements.

■ Quest Migrator For Sametime

Quest Software announced Quest Migrator for Sametime. Designed to bring inexpensive migration capabilities to the IBM Lotus Sametime platform, Quest Migrator for Sametime simplifies migration from IBM Lotus Sametime to Microsoft Office Communications Server with pre-migration discovery and assessment, status reporting, user mapping, automation, and buddy list migration in a single solution. Quest Migrator for Sametime transfers users and settings transparently, so end users will experience limited impact from the migration.

■ SAP BusinessObjects Explorer

SAP introduced its SAP BusinessObjects Explorer, which is a Business Intelligence offering that lets users intuitively search and navigate massive amounts of business data quickly and across the enterprise. SAP BusinessObjects Explorer also leverages indexed data from SAP NetWeaver BW Accelerator to deliver high performance and scalability. The offering has visualization features that enable users to generate and share charts and reports that represent the information in a useful way. The SAP BusinessObjects Explorer accelerated version for SAP NetWeaver BW will be available this summer.

■ SunGard Investran CRM

SunGard announced Investran CRM, a management tool for private equity and other alternative asset managers. Investran CRM's launch comes with the latest release of the Investran 6.0 application suite. The Web-based customer relationship tool is integrated with SunGard's Investran Accounting, a portfolio and investor accounting and private equity fund administration solution, and is designed to help organizations effectively and efficiently attract, service, and grow client relationships while helping decrease operational risk. A major feature of Investran CRM is the ability to unify front-, middle-, and back-office operations and simplify workflows between teams.

■ Tidal Software Tidal Enterprise Adapter For Cognos

Tidal Software introduced Tidal Enterprise Adapter for Cognos, which is the

interface between the Tidal Enterprise Scheduler and Cognos 8 Business Intelligence. Tidal Enterprise Adapter for Cognos lets users define, launch, and monitor Cognos 8 Business Intelligence jobs, and it ensures that all dependencies are correctly processed. Each Cognos report can be created in the same way with the Tidal Cognos adapter, and any report developed through Cognos can be put in a batch cycle without having to make any changes to the report.

MESSAGING & TELEPHONY

■ NaviSite Business Email Services

NaviSite announced that it has expanded its suite of Business Email Services specifically for SMEs. NaviSite's Business Email Services are powered by Microsoft Exchange Server and provide 100% uptime for email availability. The suite includes larger mailboxes and extra services such as wireless connectivity; email archiving; and full synchronization of email, contacts, and calendars. Enterprises can also sync email data with mobile devices, such as the iPhone or BlackBerry.

■ Rackspace Hosting Rackspace Email 7.0

Rackspace Hosting announced the latest version of its Web-based business-class email hosting service, Rackspace Email 7.0. Rackspace Email 7.0 supports iCal calendar feeds, as well as the capability to provide a designated user (such as an administrative assistant) with calendar "write access." Version 7.0 also features the use of multiple personal calendars, improved handling of foreign languages, and right-click functionality. The company says using Rackspace Email 7.0, as opposed to in-house email hosting, offers customers the ROI that comes along with cloud computing solutions.

NETWORKING & VPN

■ A10 Networks AX 5200

A10 Networks released the highest-performance application delivery controller in the AX Series Advanced Traffic Manager line, the AX 5200. The AX 5200 delivers 3 million-plus Layer 4 CPS (connections per second) in a compact 2U form factor. And to increase data center efficiency, A10 Networks includes a full suite of application acceleration, optimization, load-balancing, networking, and security features. Users' energy and operational



costs are lowered with the AX 5200, as the maximum power consumption is only 680W. The AX 5200 is tuned for processing millions of concurrent connections and high data rates. It introduces PFTA (Parallel Flexible Traffic) ASIC technology to enable high Layer 4 CPS and includes hardware-based DoS (denial of service) SYN flood protection.

■ Aruba Networks Virtual Branch Network

Aruba Networks released its VBN (Virtual Branch Network) solution, which connects remote users with enterprise applications and resources to simplify management of branch offices, clinics, home offices, and teleworkers in a transparent and secure fashion. VBN is designed to help segments driven by the need to support dispersed workforces, lower operating expenses through the reduction of real estate holdings, and encourage sustain-

ability through teleworking. Additionally, VBN includes software for data center-based Aruba Controllers, as well as Aruba Network's Remote Access Points and Branch Office Controllers.

■ Attachmate Reflection X Advantage Version 2.0

Attachmate released Attachmate Reflection X Advantage version 2.0, a multi-platform X server that connects remote Windows, Unix, Linux, and Mac desktop users to graphical Unix-based applications. Attachmate Reflection X Advantage version 2.0 is enhanced with OpenGL (Open Graphics Library) and SSH (Secure Shell) support to optimize performance for high-latency and low-bandwidth networks. It helps organizations align with green computing standards and lower IT costs by extending the life and reach of existing



applications and servers. Moreover, Attachmate Reflection X Advantage version 2.0 helps organizations provide remote application access for users who are no longer colocated with their Unix host system.

■ Barracuda Networks Barracuda SSL VPN 180

Barracuda Networks released the latest addition to the Barracuda SSL VPN product line, the Barracuda SSL VPN 180 (\$699), which offers no per-user fees and support for up to 15 concurrent users. Designed for SMEs, the full Barracuda SSL VPN line offers a cache-cleaning utility to protect information accessed by users who remotely access internal network resources from a public or shared computer through the



Barracuda SSL VPN. As it is enabled, the cache-cleaning utility automatically runs when users log out or disconnect, clearing all traces of the secure session from the Web browser cache and history. The Barracuda SSL VPN product line also features administrator tools that allow policy enforcement for network access control based on the client operating system or Web browser version, the company says.

■ Bomgar 10.3

Bomgar released Bomgar 10.3, the latest version of its appliance-based remote support software that includes deeper Mac support functionality and IT productivity tools. Bomgar 10.3 gives IT help desks a universal support platform for the secure remote control of any computer for on-demand troubleshooting—no matter the location, operating system, or language. A few core improvements in version 10.3 include Mac system information, click-to-chat features, and canned scripts. The Mac system information enables support reps to scan the dashboard and dig deep into hardware or network configurations. Click-to-chat lets an end user instantly initiate a chat session from the Web, while canned scripts provide reps with the ability to upload scripts remotely for use in common support issues to save time.

■ Brocade IP Networking Solutions

Brocade unveiled a line of products designed to address all aspects of the network. The new products include the

PRODUCT RELEASES

Brocade TurboIron 24X 10 Gigabit Ethernet top-of-rack switch, Brocade ServerIron ADX Series ADCs (application delivery controllers), and Brocade FastIron CX Series Power over Ethernet Plus-ready switches. According to Brocade, this line is engineered to enhance performance and reliability, as well as power, cooling, and space efficiency, while cutting costs and complexities. Additionally, these products provide advanced application delivery, data center connectivity, and enterprise campus network capabilities.

■ Cisco Network Magic

Cisco announced updates for its Network Magic suite of network management software that helps customers set up, manage, and secure their home networks. The suite includes Network Magic Pro, Network Magic Essentials, and Network Magic Basic and offers an interactive network map, more intuitive navigation, support for more types of networked consumer devices, and easier printer and file sharing access. Other features include comprehensive parental controls, integration with Linksys wireless routers, and expanded language support.

■ Citrix Systems nCore Technology

To give greater capability to its NetScaler appliances, Citrix Systems announced nCore technology. nCore allows high-end NetScaler appliances to deliver rich Web 2.0 applications and cloud services for up to seven times more users with no new hardware investments required, which unlocks the power of the multicore Intel processors that run NetScaler products. Thus, NetScaler appliances are better able to run more Web acceleration and security functions in parallel than before.

■ Citrix Systems NetScaler MPX 9500, 7500 & 5500

Citrix Systems added the NetScaler MPX 9500, MPX 7500, and MPX 5500 appliances to its line of NetScaler MPX products. The MPX 9500 and MPX 7500 are designed to offer price-performance enhancements for midsized to large enterprises, while the MPX 5500 is for smaller companies. All of the appliances are designed to accelerate and secure consumer Web applications and cloud-based services at a lower price than previous NetScaler appliances. The appliances offer 500Mbps to 3Gbps of Layer 7 throughput and are based on standard Intel hardware.

■ eTelemetry VID For Locate 4.2

eTelemetry released Locate version 4.2, which now supports the VID (Virtual Infrastructure Discovery) capability for network device knowledge, including the device's MAC address, IP address, and physical location. VID utilizes advanced mapping technology to provide contact



information for virtual machines operating on desktops and location information for server-based virtual machines. The solution continuously compares the network infrastructure to the virtual infrastructure for identification and remediation of policy breaches. This upgrade also features master console deployment mode for large-scale remote collection nodes.

■ Extreme Networks BlackDiamond 8900-Series

Extreme Networks unveiled its BlackDiamond 8900-series modules for the BlackDiamond 8800 series switch. The

BlackDiamond 8900-series modules support 10 Gigabit Ethernet scalability, up to 582 10 Gigabit Ethernet ports in a single rack. Featuring quick system integration and network environmental automation, Extreme Networks BlackDiamond 8900-series modules upgrade to a 3.8-terabit



switching fabric. The EPICenter network management tool supports XML, CLI, and SNMP interfaces. The BlackDiamond 8900-MSM128 is listed at \$24,995, the BlackDiamond 8900-10G24X-c starts at \$44,995, and the BlackDiamond 8900-G96T-c has a list price of \$24,995.

■ Fluke Networks LinkRunner Duo CE Pocket Carrier Ethernet Test Set

Fluke Networks announced the LinkRunner Duo CE Pocket Carrier Ethernet Test Set, a product from Fluke's Network SuperVision Solutions. The tester is designed to offer an inexpensive way for field technicians to test the deployment of carrier Ethernet services. The device weighs just 10 ounces and can fit in a shirt pocket. Users can connect the device to a PC via a mini-USB port to receive software updates. The tester supports testing for ProVision, RFC 2544, and BERT across Layer 1, 2, or 3 connections. It can also be programmed to send back all frames, all non-broadcast frames, or only frames addressed to it, so it can be placed on the network without affecting service and replying only when tests are sent to it.

■ Fluke Networks LinkRunner Duo Network Multimeter

Fluke Networks' Network Supervision Solutions branch announced the LinkRunner Duo Network Multimeter, a link-testing tool designed to allow users to detect and identify 90% of basic connectivity and cabling problems without having to escalate the issue and waste network engineer time. Features include the ability to connect to both fiber and copper network links, speeds of up to 1Gbps, and a small form factor. It enables frontline network professionals to detect and resolve a broader range of today's link connectivity problems and also helps solve issues with 802.1X security conflicts and PoE service.

■ Force10 Networks 90-port Line Card For ExaScale E1200 & E600

Force10 Networks released a 90-port line card designed for the ExaScale E1200 and E600 midsized chassis. The ExaScale line card supports 100 Gbps/slot data capacity, flexible deployment, and non-blocking scalability for up to 1,260 10/100/1000Base-T ports inside a half-rack chassis. Other features include backplane technology and advanced packet processing. The line card starts at \$60,000.

■ Lansweeper v3.5.1

Lansweeper announced the newest version of Lansweeper, its Windows network inventory application. Version 3.5.1 lets users create a complete inventory of Windows networks without the need to install an agent on every workstation or server. Users can view hardware and software details of clients, and administrators can help desk staff can manage users' assets through an intuitive Web interface. Administrators can define custom reports, actions, and scripts from the interface.

■ ManageEngine OpManager 8

ManageEngine announced ManageEngine OpManager 8, an upgrade to the company's

flagship network management application that's designed to make network infrastructure monitoring and management easier, faster, and more capable. At startup, OpManager 8 displays an "Intro" tab within the application's Web-based management console, which takes an IT administrator through setup by dividing configuration tasks into four categories: Discover, Visualize, Manage, and Reports. The company says that in less than 30 minutes, all devices in an enterprise network may be discovered and performance monitoring can begin. Enterprise administrators can create a customizable dashboard that holds up to 92 predefined widgets. ManageEngine also includes an NCCM (Network Change and Configuration Management) plugin that can automate most processes involved, such as running configuration backups in order to ensure policy compliance via configuration control.

■ Opalis Cloud Lifecycle Management

Opalis announced its Cloud Lifecycle Management solution, which lets AWS (Amazon Web Service) users align resource requirements to meet business needs while managing cloud services costs. Users can manage services from the cloud infrastructure and take advantage of dynamic cloud services based on user-defined thresholds. A Web-based request system helps control consumption and costs. The solution also includes an integrated approval process for audit control and provides email alerts when the cloud resource is about to expire.



■ Proxim Wireless ORiNOCO 802.11a/b/g/n USB Adapter

Proxim Wireless announced what it says is the industry's highest-throughput 802.11a/b/g/n USB client adapter, the ORiNOCO 802.11a/b/g/n USB client adapter (\$75). It boasts throughput speeds that exceed 150Mbps for desktops and laptops over an 802.11n connection when it's used in conjunction with the company's ORiNOCO AP-8000 (\$1,099) and AP-800 (\$799) access points. The adapter is also backward-compatible with 802.11a/b/g networks.



■ Riverbed Technology & Check Point Network Security Solution

Riverbed Technology announced that it will partner with Check Point Software Technologies to provide a product that combines Riverbed's WAN optimization technology and Check Point's security software. The joint solution, which pairs the RSP (Riverbed Services Platform) and the Check Point Security Gateway R70, will help enterprises protect networks at remote and branch offices through a virtualized environment. The RSP, a virtualized, extensible data services platform, allows customers to deploy edge services. Security Gateway R70 provides customers with a set of centrally managed security protections.

■ Riverbed Technology & Websense Web Security Solution For Riverbed Services Platform

Riverbed Technology announced that RSP (Riverbed Services Platform) will now support Websense Web Security. The companies have merged solutions to produce a virtualized, extensible data service platform. Customers utilizing the Riverbed Steelhead appliance will be able to deploy Websense Web Security onsite, as a fully hosted remote service or as a hybrid SaaS model. The Riverbed/Websense solution

will protect Web applications and streamline cross-platform delivery.

■ ScriptLogic Remote Support Center 2.0 Beta

ScriptLogic released the beta version of Remote Support Center 2.0 for remote support and assistance. This release features two new remote support clients: ExpertAssist and InstantAssist. At the enterprise level, ExpertAssist takes care of IT problems without disrupting the user, and it has more than 40 management options to take functional control of the Registry, file system, and groups. InstantAssist is a zero-install, nonadministrative client for external users. Remote Support Center ExpertAssist is priced at \$7.50 per seat, and Remote Support Center InstantAssist is \$699 per help desk worker.

■ SoftLayer Technologies CloudLayer Computing

SoftLayer Technologies announced the latest in its CloudLayer line of services, called CloudLayer Computing. CloudLayer Computing uses the Citrix XenServer virtualization platform as its foundation and lets customers bring up cloud-based computing instances in as little as five minutes. With CloudLayer Computing, users can create a fully unified computing solution by integrating CloudLayer Computing instances with dedicated servers, automated services, and other CloudLayer services. Monthly billing is based on hourly usage or a monthly rate with no long-term commitment.

■ Stampede Technologies Stampede FX Series 2000 & 4000

Stampede Technologies announced new products in its line of Application Acceleration and WAN Optimization tools, including the Stampede FX Series 2000 and 4000. The Stampede FX Series 2000 and 4000 are designed to cut bandwidth utilization up to 400% in either direction and enhance end-user performance in large enterprises. Both can be deployed as single-sided outbound optimization tools, or remote software capabilities can be added for a two-sided program designed to produce an optimal bidirectional (downlink and return channel) optimization tool. The Stampede FX Series 2000 and 4000 platforms vary in price and hardware designs.

■ Transition Networks Focal Point 2.2

Transition announced the newest version of its free network management software, Focal Point 2.2. The software features improved usability and enhancements to its Java-based SNMP GUI. Focal Point 2.2 offers a visual user interface with a discovery screen that features a progress bar when discovering managed devices and a main chassis view screen that showcases the entire Point System chassis in a single view. Focal Point is compatible with Microsoft Windows NT, 2000, XP, and Vista; HP-UX 10 or higher; and Sun Solaris 2.6 or higher.



■ Transition Networks SISGM1040-162D-LR

Transition Networks released the SISGM1040-162D-LR, a ruggedized, fully managed switch the company says is designed to offer highly available, dual-speed fiber connectivity for network devices located in remote, outdoor, or factory floor settings. In addition to six 10/100/1000Base-T RJ-45 ports, the SISGM1040-162D-LR

PRODUCT RELEASES

Continued from Page 17

has two 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP combo ports. All the RJ-45 ports support auto-negotiation and AutoCrossTM. The SFP ports support 100Base-FX and 1000Base-X SFP optics. The switch supports IEEE 802.1Q VLANs, IEEE 802.1P class of service, IGMP for multimedia apps, X-ring, dual homing, couple and dual-ring topologies for redundant backup, and recovery times of less than 20ms. In addition to an integrated Web interface, Telnet and command-line interfaces are available for managing the switch. The SISGM1040-162D-LR is offered in an operating temperature range of -10 degrees Celsius to +50 C.

■ TRENDnet Web Smart Switches

TRENDnet released upgrades for its Web Smart Switch portfolio via firmware updates and shipment in new products. Support for SNMP allows the use of a variety of third-party network monitoring and management utilities. STP (Spanning Tree Protocol) support facilitates the use of a



switching loop structure for failover protection should a switch falter. Finally, port-based IEEE 802.1X network access control support provides Web Smart's lineup with robust enterprise-based network security.

■ WatchGuard SSL 100

WatchGuard announced the release of WatchGuard SSL 100, an all-in-one SSL VPN appliance to streamline network access and application delivery for a company's mobile workforce. Highly flexible and secure, WatchGuard SSL 100 can support up to 500 total users and does not require additional service contracts. WatchGuard SSL 100 is able to seamlessly integrate LDAP, Active Directory, and RADIUS. To extend business flexibility, WatchGuard SSL 100 delivers non-native desktop and server applications, including SSH (Secure Shell) and RDP (Remote Desktop Protocol). IT administrators can



also use Desktop Sharing and Remote Assist on mobile devices. WatchGuard SSL 100 provides security for mobile end users via deep device examination, endpoint integrity, and an auto-loading access client. The package costs \$1,999.

■ XRoads Networks XOS 4.x Firmware

XRoads Networks released the next generation of firmware for current and future customers: XOS 4.x. Capabilities include multisession acceleration technology, bandwidth prioritization, string-based application definitions, real-time network reporting, and policy-based routing for Site2Site tunnels. This upgrade applies to EdgeXOS platform clients.

PHYSICAL INFRASTRUCTURE

■ Chatsworth T-Series SteelFrame Cabinet

Chatsworth announced updates for its T-Series SteelFrame Cabinet, designed for applications requiring a fully featured standard solution for mounting and securing electronic, network, and security equipment. The SteelFrame Cabinet offers a variety of door, lock, and top-panel options. The expanded line now includes 20 sizes to



fit various requirements and applications and is available in three styles: T-Series SteelFrame Cabinet, T-Series SteelFrame with Vertical Exhaust Duct, and the T-Series SteelFrame Frame Only.

■ HellermannTyton Assorted Fir Tree Bundling Clips

HellermannTyton announced its Assorted Fir Tree Bundling Clips, available in three sizes. The clips are engineered for a straightforward and sturdy method of routing, mounting, and securing wire harnesses to mounting holes. The Assorted Fir Tree Bundling Clips feature a staggered fir tree design that reduces the installer's efforts for an ergonomically friendly installation by having one of the lowest insertion forces in the industry. The bundling clips also have a high pull-out force for longevity in their field applications. Finally, the cable tie or tape is held on the clip even if the bundle is in a high-vibration application, thanks to anti-sliding bars.



■ MovinCool Office Pro, Classic Plus & CM12

MovinCool upgraded all the models within its Office Pro and Classic Plus lines of portable spot air conditioners, as well as its latest ceiling-mounted CM12 product, to use R-410A, an environmentally friendly refrigerant. The refrigerant doesn't contain any greenhouse gases, as opposed to hydrochlorofluorocarbon-based refrigerants. The company's portable air conditioners provide users seasonal, supplemental, and emergency cooling, as well as moisture removal for server and telecommunications rooms, data centers, offices, warehouses, assembly lines, manufacturing processes, and other purposes. The CM12 ceiling-mounted fan provides cooling in areas where space is limited.



■ Onset HOB0 U12-006

Onset announced that plug-in AC current sensors from Veris Industries are available directly from Onset for its HOB0 U12-006 data loggers. The split-core AC current transducers are compact and self-powered and can log the amperage draws of electrical equipment such as motors and pumps unattended for days, weeks, or months at a time. The Veris sensors plug into the external input jacks of the HOB0 U12-006 and range in price from \$90 to \$115.

■ Opendgear IP-KVM1001

Opendgear released the IP-KVM1001 (\$345), a palm-sized KVM over IP model that the company is aiming at branch offices, laboratories, Web hosting providers, and data centers. The single-port, Zero U-enabled IP-KVM1001 can be used at the rack or remotely over IP and offers full control of systems during boot up, BIOS-related maintenance, and server or operating system lockups. It features a browser-based interface with encryption and authentication protection without requiring installation of client software. It also offers USB



and PS/2 connectivity and a serial port for access to switches, routers, firewalls, or external modems.

SECURITY

■ Astaro Web Gateway & Astaro Mail Gateway Virtual Appliances

Astaro announced that its Astaro Web Gateway and Astaro Mail Gateway will be offered as virtual appliances to provide customers with a security alternative that uses fewer resources and reduces administrative costs. The virtual appliances also let Astaro partners offer their customers the Astaro Web Gateway and Astaro Mail Gateway in SaaS models, the company says. First, partners deploy the products as virtual appliances on their own hardware, and then they deploy a clone of the virtual machine for each customer to provide them with the



email and Web security they need. The Astaro Web Gateway provides integrated URL filtering; malware detection; instant messaging; P2P application control; bandwidth optimization in order to completely secure Web access; dual antivirus engines; Active Directory/e-directory integration; clustering capabilities; and HTTPS, HTTP, and FTP scanning.

■ Barracuda Networks Barracuda Web Filter 1010

Barracuda Networks announced the Barracuda Web Filter 1010, which is designed for organizations capable of handling up to 12,000 concurrent users in a single appliance. The Barracuda Web Filter 1010 starts at \$89,999 with no per-user fees, and it's an integrated appliance that provides malware protection, content filtering, application policy control, and an embedded database and reporting engine. The company says a single Barracuda Web Filter 1010 is capable of handling 1Gbps throughput and features a 1TB Web cache. It can manage policy for up to 15,000 TCP connections at one time, and it has four network interfaces, which can be used simultaneously in WCCP deployment or in two LAN/WAN pairs in an inline deployment.

■ Fortinet FortiGate-30B

Fortinet announced FortiGate-30B, a multithreat security device that offers powerful network protection technology used by enterprise customers to the growing population of telecommuters, remote/branch outlets, and small businesses. The device is designed to accommodate the ease-of-use and price sensitivities of the smallest networked environments, provide an integrated security architecture for broad protection in a compact desktop form factor, and support small wireless networked environments. The device supports remote sites, retail outlets, branch offices, telecommuters, and small/home offices.

■ LogLogic Security Event Manager

LogLogic announced the release of SEM (Security Event Manager), a log management product that streamlines the analysis of log data throughout the enterprise. Security Event Manager helps to simplify security event management processes and improve overall security. SEM's features include a natural language policy editor, built-in incident workflow and SLA management, advanced correlation and analysis, and real-time vulnerability virtual patching.

■ Quest e-Discovery Manager

Quest Software announced Quest e-Discovery Manager, a tool to help IT, HR, records managers, and legal investigators scope, collect, review, and export electronically stored information without outsourcing to expensive third-party legal consultants. Quest e-Discovery Manager features advanced tagging, filtering, search, and project management capabilities designed to let organizations efficiently address legal, regulatory, and internal investigations while reducing the cost and complexity of searching for, collecting, and processing data. Quest e-Discovery Manager is aligned with the EDM (Electronic Discovery Reference Model) and complements Microsoft Exchange Server 2010.

■ SECUDE Secure Single Sign-On For SAP NetWeaver Enhancements

SECUDE announced improvements to its Secure Single Sign-On for SAP NetWeaver, which reduce implementation costs to nearly nothing, according to the company. The updated solution's Web-based authentication doesn't require deployment of any client software, saving time and money while providing greater flexibility, SECUDE says. Companies are also able to encrypt traffic between SAP clients and SAP servers, and users are given a Unified Single Sign-On experience meant to boost productivity and cut help desk costs. Secure Single Sign-On for SAP NetWeaver offers encryption and Single Sign-On via the corporate network and supports Windows, Mac OS X, Linux, and Unix.

■ Tandberg Compliance Appliance

Tandberg introduced its Compliance Appliance, which the company says is the industry's first video-recording appliance designed to assist organizations in the management of risk and compliance with anticipated video-archiving regulations. The video-recording process is streamlined with the Tandberg Compliance Appliance, which has become an important part of regulatory compliance and risk management for sensitive industries such as the health-care, legal, education, and financial professions. It's a scalable video-archiving system that can automatically capture up to 50 1MB point-to-point videoconferences in 720p30 high-definition resolution simultaneously. It meets regulatory requirements in a variety of ways to minimize the risk of organization liability.

STORAGE

■ Accordance Systems ARAID M70 RAID 1 Controller

Accordance Systems unveiled the ARAID M70 RAID 1 controller, which provides backup and security capabilities for eSATA and SATA drives. Enterprises can use 2.5-inch or 3.5-inch hard drives, and when the two hard drives inside the computer chassis are connected, the ARAID M70 copies all data to both drives. If either drive fails, the system will continue running on the surviving drive and will alert you of the event, thus resulting in no downtime. To set up the ARAID M70 controller, you must slide the M70 into an open slot and attach the power and hard drive cables. Then, the M70 automatically sets up the disks as a RAID system and backs up the data from your primary disk onto the second disk. Drivers or any other applications are not needed; therefore, the M70 can work on almost any operating system, including Windows, Mac OS, Linux, Solaris, BSD, SCO, Open Server, Netware, and more.

PRODUCT RELEASES

■ Bus-Tech Mainframe Data Library Model 100V

Bus-Tech announced the MDL (Mainframe Data Library) model 100V, which adds mainframe connectivity to VTL vendor offerings and provides data centers with a single backup vehicle for mainframe and distributed system server environments. To ensure interoperability, the MDL-100V was tested with the industry-leading VTL vendors' products for three key measurements: connectivity/functionality, read and write performance, and deduplication effectiveness where applicable. The MDL-100V connects to the VTLs as a server via dual Fibre Channel. The MDL-100V is available with either FICON or ESCON mainframe channel attachment and emulates up to 32 tape drives (3480/90 and 3590) on the mainframe. When the mainframe writes tape volumes to the MDL-100V, they are passed directly through to the VTL, and subsequent data vaulting is a function of the specific VTL.

■ Clover Systems DVX

Clover Systems announced the newest version of its DVX disc analyzer. DVX now includes a QuickScan feature, which reduces test periods by up to 10 times. The disc analyzer increases CD test speed by more than three times and increases DVD test speeds by almost 10 times, the company says. With the optional Autoloader, users can test more than 400 discs in an eight-hour period. DVX starts at \$4,995.



■ DataPreserve Pro

DataPreserve unveiled DataPreserve Pro, a comprehensive software suite of enterprise-level, cloud-based data protection software and storage. This program is designed to aid small and mid-sized enterprises in preserving and guarding data from multiple locations. DataPreserve Pro is engineered to be used by MSPs (managed service providers) who offer data protection services to their customers without incurring the expense related to establishing and maintaining a data center. In addition to delivering software to MSPs, DataPreserve also provides secure data protection at data centers with state-of-the-art equipment.

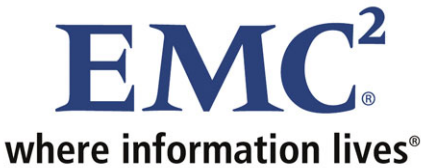
■ Dolphin StorExpress

Dolphin announced additions to its StorExpress solid-state storage product line. The new products support up to 4TB of PCI-E SSD in a single rackmount enclosure and can deliver more than 270,000 read and write IOPS and up to 2,800MBps per second of sustained bandwidth. StorExpress products are directly attached to host servers through external extension of PCI-E with x8 cables. The direct PCI-E connectivity eliminates the need for intermediate protocols, resulting in up to 10 times better write transaction performance than SATA-based SSDs, Dolphin says.

■ Dot Hill Systems 2522 & 2722

Dot Hill announced what it calls the industry's first 2U, 24-drive, high-performance, high-density external RAID storage systems for 2.5-inch drives with SAS host connectivity. The 24-bay units include the 2522 for 3Gbps SAS storage and the 2722

for 4Gbps Fibre Channel drives. Both short-chassis models feature a 12Gbps host interface speed, and they are expandable up to 96 SAS drives. Pricing starts at \$16,000.



■ EMC Storage Configuration Advisor

EMC announced the EMC Storage Configuration Advisor, which is an automated management software platform designed to help IT personnel resolve improper storage-area network configuration issues before they affect performance. The Storage Configuration Advisor is capable of agentless discovery and configuration analysis, change tracking, storage service analytics, and best-practice policy management. Pricing for EMC's Storage Configuration Advisor is based on storage capacity.

■ F5 Networks Data Management OS v5.0 & Data Manager v2.5

F5 Networks released version 5.0 of Data Management Operating System, which powers F5 ARX file virtualization solutions. The release includes automated tiered storage deployments and enhanced data protection and recovery. It also features seamless import functionality for virtualized deployment, advanced data protection with a file-tracking capability, and support for Microsoft Windows 2008. F5 also announced Data Manager version 2.5 for improved storage reporting, large file storage environment forecasting, and cost-reduction analysis.

■ LaCie 2big Network & 5big Network

LaCie upgraded its LaCie 2big Network (\$319.99) and 5big Network (\$799.99) product lines for archiving, accessing, and sharing stored data. The 5big Network, which uses a GbE connection and includes five hot-swappable drives supporting seven RAID modes, includes a 10TB model, making it the first in its class to provide double-digit capacity, LaCie states. The 5big Network includes Time Machine compatibility, better multimedia server abilities, and compatibility with the iTunes server. The two-bay RAID 2big Network offers 4TB storage and features Windows Active Directory support and local backup ability.

■ LinMin Bare Metal Provisioning Release 5.4 With Turbo-Imaging

LinMin announced Bare Metal Provisioning release 5.4 with Turbo-Imaging, a disk imaging subsystem for disaster recovery. It's designed to handle the demands of the latest operating systems, as well as provisioning, logging, and cloud computing. In the event of an attack by malicious software, Turbo-Imaging relies on automatic file system detection and intelligent compression to return the server to a normal state. By deploying and repurposing the interior hardware layers, Turbo-Imaging can recover multiple environments. LinMin Bare Metal Provisioning 5.4 is available in numerous client configurations (up to 1,000 client systems) for Linux and Windows.

■ Netgear ReadyNAS Products

Netgear added to its family of ReadyNAS products, a series of rack-mount unified network storage appliances for small to medium-sized enterprises. The ReadyNAS 2100 is a 1U 4-bay storage system that enables SMEs to securely share, store, and protect business-critical files across a LAN or WAN; guard against disk failures; and

increase capacity as needed. It features enterprise-grade hard drives and Error Correction Code RAM, as well as Intel architecture.

■ Sans Digital TowerRAID TR4X/TR4X-B, TR8X/TR8X-B

Sans Digital announced it expanded its TowerRAID series of storage subsystems through the addition of mini-SAS interfaces. The TowerRAID TR4X/TR4X-B, a 4-bay tower with a single mini-SAS connection, and the TR8X/TR8X-B, an 8-bay tower with two mini-SAS connectors, support either SAS or SATA drives over mini-SAS (SFF-8088) cabling and deliver superior read/write speeds. Possible points of failure are reduced as a result of the combination of four hard drive connections into one by the mini-SAS ports, while uninterrupted data transfer is also delivered.

■ Sepaton DeltaRemote

Sepaton released its DeltaRemote software, which lets enterprises back up and replicate large quantities of data for disaster protection. According to Sepaton, DeltaRemote is designed to provide the performance, scalability, and automation large enterprises need to meet regulatory requirements for disaster recovery, reduce labor-intensive tape handling, and meet stringent RTO (recovery time objectives). DeltaRemote utilizes Sepaton's scale-out architecture and DeltaStor deduplication software to cut the bandwidth requirements of replication by as much as 97%. This allows companies to add performance or capacity as it is needed by incorporating modular processing nodes or another disk.

■ StoredIQ Federated Master Appliance

StoredIQ announced the Federated Master Appliance, which is designed to deliver federated search, classification, and management features that expand upon the existing StoredIQ federated litigation hold capability. The appliance gives organizations whose information management needs stretch beyond a single appliance or geographic location visibility into distributed data environments and centralized management of multiple StoredIQ appliances. Features include centralized searching, classification management, and data object tagging; a federation administration interface; a centralized federated litigation hold; and global visibility and access.

■ Sun Microsystems StorageTek Virtual Systems Manager

Sun Microsystems announced the StorageTek VSM (Virtual Systems Manager), a tape virtualization storage archive solution designed to save costs and simplify management in the data center. Enhancements include a capacity increase for the StorageTek VSM5, now up to 90TB; the new StorageTek VSM 5e, a low-cost entry model of the StorageTek VSM 5; the StorageTek SL3000 AEM (Access Expansion Module), designed to enable 24/7 availability; fully redundant and replaceable robotics; and StorageTek ELS (Enterprise Library Software).

■ Sybase Replication Server 15

Sybase unveiled the latest version of the Sybase Replication Server, which is a platform that lets users migrate and sync data across the enterprise. Sybase Replication Server 15 delivers pervasive data accessibility and real-time data delivery across heterogeneous database environments, letting users benefit from simplified management without having to migrate to an expensive new platform. Replication Server 15's core capabilities include extreme performance improvements for data distribution and synchronization,

expanded heterogeneous database replication capabilities for Oracle and other databases, and simplified heterogeneous environment configuration and management.

■ Talend Integration Suite MPx

Talend released its latest enterprise data integration platform, the Talend Integration Suite MPx. Created to enhance performance levels, Talend Integration Suite includes FileScale technology for parallelized processing of data within integration architectures. FileScale sorts, filters, merges, and aggregates data for maximum compliance. Levels of massive parallelization break down data sets into streams. Talend Integration Suite MPx supports Windows 32- and 64-bit, Solaris and OpenSolaris (SPARC and Intel x86), IBM AIX, HP-UX- and Linux 32- and 64-bit.

■ Tandberg Data DPS1000 Series VTL

Tandberg Data unveiled the Tandberg DPS1000 Series VTL, which can be used with Tandberg Data Tape Libraries for disaster recovery, long-term archiving, and consolidated offsite backup. The scalable DPS1000 Series VTL can maintain a different virtual library for a maximum of 100 local or remote host systems, including virtual machines. It's designed for security and easy integration into existing networks and can back up its contents to a traditional tape library. Pricing starts at \$9,995 for a 1U, 3TB DPS1100 unit.

■ Unitrends Recovery-610 & Unitrends 4.1

Unitrends released Recovery-610, a 1U disk-to-disk appliance that includes four 1.5TB drives in a RAID 10 configuration. Unitrends also unveiled Unitrends Release 4.1, an updated version of its data recovery software that offers support for the Windows Server 2008 family, as well as the Novell OES family and Microsoft Hyper-V and Xen virtualization platforms. Recovery-610, an entry-level rack-mounted system, uses Unitrends Release 4.1. It also features a quad-core processor, 8GB of memory, and optional eSATA and USB archiving.

■ Winchester Systems FlashDisk SX-3400

Winchester Systems announced a high-performance tiered RAID array, the FlashDisk SX-3400, which is the company's first 10th generation FlashDisk RAID array release. The FlashDisk SX-3400 offers RAID 6 dual parity and 8Gbps Fibre Channel connectivity. It has room for 16 SAS or SATA drives. With provisions for expansion up to 112 hard drives, the SX-3400's maximum capacity is 112TB with 7,200rpm, 1TB drives. It's available with single or dual redundant controllers, and it supports Citrix XenServer, VMware, and Microsoft Hyper-V virtual servers.

■ Xiotech Emprise 7000 Edge

The Emprise 7000 Edge from Xiotech is a SAN solution with the company's ISE (Intelligent Storage Element) technology that offers organizations affordable, flexible, and scalable architectures. ISE proactively maintains the storage array to keep performance high and to minimize costly disk maintenance. The scalable Emprise 7000 Edge supports up to 160TB and features Web services-based management through the ICON Manager and Virtual View, which offers SMEs simplified storage provisioning and management. Also, the Emprise 7000 Edge comes with a five-year hardware warranty.



EPA Officially Launches Energy Star Server Initiative

The Environmental Protection Agency released the final draft of the Energy Star Version 1.0 Computer Servers Specification on May 15. Although blade servers are not included in the initial phase of the Energy Star server ratings, the specification covers servers with one to four cores. After years of certification development and performance regulations, the EPA is backing Tier 1 of metrics and requirements for energy efficiency.

The EPA initially approached Congress in 2007 with a report assessing the potential for the advancement of energy efficiency in both public and private data centers. Taking a holistic approach, the EPA recommended enacting a combination of programs and incentives for energy savings, which included industry stakeholder collaboration, federal leadership, and advanced technology research and development. Research participants were asked to submit multiple months of data as part of the initiative's unified process; companies such as AT&T, JCPenney, Microsoft, ServerVault, and the U.S. Bureau of Reclamation contributed relevant data.

Energy Star's new server spec will require servers to meet minimum energy standards for both idle and full-load modes. In terms of power efficiency, power supplies and management tools need to meet the Energy Star functionality standard for power factor test levels. When a server is shipped, reporting and measuring features must be enabled to officially attain the Energy Star rating. The Tier 2 specification announcement will be announced in the near future and will spotlight the "development of criteria that recognize those computer servers that best combine computing performance and energy efficiency," according to the final draft specification.

Eco-Conscious Step

The focus on reducing power consumption is an eco-conscious step. Mark Blessing, vice president of marketing at SiCortex, says he is in favor of the specification because it focuses the attention in the right place: "If computer buyers aren't sensitive to the energy efficiency of their computers, computer manufacturers won't be."

"The fact that consumers of computers, if you will, [are] starting to pay attention . . . that drives the vendors to focus more on improving the efficiency of their products," says Blessing.

"What I'm looking forward to is the Tier 2 because that's where I think [the Energy Star rating] will be most relevant for reducing the energy consumption in our country in terms of data center power consumption," Blessing says. "And I think that it's also a very strong stimulus for innovation because it forces manufacturers to think about ways of improving our products."

by Joanna Safford



FEATURED PRODUCT

Simplified Backup Solutions

Accordance USA's ARAID Controllers Are Cost-Effective & Easy To Implement

by Robyn Weisman

. . .

FOR MOST SMES, backing up data means more than just connecting PCs to hard drives or even connecting servers to one type of storage media. "It is key to have multiple layers to backups to create broad coverage for data retention and recovery, [including] tape backup, swappable drives, SAN network, and even online backup as a final layer. This allows for faults to exist in the chain of backups and still ensure service coverage," says Blane Warrene, director of

run-of-the-mill hard drive. First off, neither requires any software to run. "You just hook it up, and we take care of the RAID array for you," says Steve Johnson, president of Accordance USA. "It can be attached to any operating system because all the software is embedded, and it can be supported on Windows, Linux, Mac, and so forth because we just appear on the system as a SATA hard drive."

According to Warrene, storage-intensive operations frequently have mixed Unix, Linux, and Windows environments, and it's important to use storage devices that play well with as many operating systems as possible. The fact that the ARAID M200 and 2200 can be used in these heterogeneous environments makes them appealing options for IT, especially given that all the RAID array processing is handled on the ARAID device controller, separate from the main processor.

"This should be a real attraction, as the smaller the environment often means less depth with hardware RAID controller experience," Warrene says.

Both ARAIDs employ RAID 1 mirroring to continually store and update multiple identical copies of data on the two installed drives. "In the event one drive fails, your computer will continue to run on the good drive, but they will alert users that one of the drives just failed [via] an audio alarm [and] an LCD display that flashes and displays that the drive has failed, and [they will] even send an email over that says you've lost the drive," says Johnson.

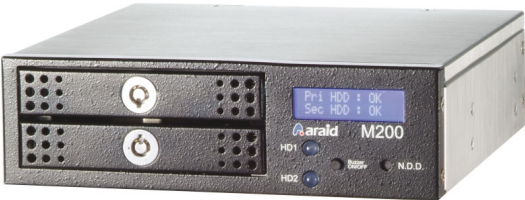
The ARAID M200 fits into a single drive bay where a single 3.5-inch hard drive or DVD-ROM player normally goes and uses 2.5-inch SATA disk drives, while the ARAID 2200 takes up two drive bays and uses 3.5-inch SATA disk drives. The user can choose whichever general-purpose drives he prefers.

Hot-Swapping Is Tops

Both the ARAID M200 and ARAID 2200 are hot-swappable, making them effective backup solutions. RAID 1 arrays often aren't used as backup solutions



ARAID 2200



ARAID M200

technology solutions at business services provider CBIZ (www.cbiz.com).

Warrene believes any SME's backup chain should have a minimum of two distinct copies of its data using at least two separate processes. "It is especially critical in industries with more rigid regulatory rules on the 'chain of custody' of data and affirmations that backup, recovery, and data continuity is comprehensive," Warrene says.

West Des Moines, Iowa,-based Accordance USA (www.accordancesystems.com) specializes in RAID appliances that provide users with an easy-to-use backup solution for computers and workstations. Two of its offerings, the ARAID M200 and the ARAID 2200 RAID controllers, provide IT departments with two easy-to-use, effective ways to back up data. Both devices use two SATA hard drives per device, employ RAID 1 mirroring, and have plug-and-play capabilities, all at a low cost.

Just Hook It Up

Accordance's ARAID M200 and 2200 offer features that particularly appeal to data center managers, primarily coming from both models' ability to act like a

contact

Accordance ARAID M200 & M2200 RAID Controllers

(515) 223-4845
www.accordancesystems.com

Description: The ARAID M200 and M2200 are compact SATA RAID controllers that use RAID 1 mirroring to provide low-cost, easy-to-implement backups for small to midsized enterprises.

Interesting Fact: Accordance USA came about when Taipei, Taiwan,-based parent company Accordance Systems needed an SNMP agent for its original ARAID devices and contacted Icon Labs (www.icon-labs.com). Steve Johnson, who led the SNMP agent project, ended up leaving Icon Labs and forming a joint venture that became Accordance USA.

a dozen hard drives, which can then be stored offsite, similar to the way digital backup tape is used.

Warrene puts hot-swapping at the top of his list of desired features. "It just might push some groups to drop tape backup and replace it with this solution," he says. "I particularly like hot-swapping in smaller groups or environments where this might be a critical component of the backup process, because rotating drives into secure offsite storage is more efficient here than tape."

Backup Sweet Spot

"These [devices] target a specific segment of the business continuity process—slotting in nicely between tape and local disk backup and right behind larger storage-area network and online backup processes," Warrene says.

Warrene says that the ARAID M200 and 2200 plug into those layers of backup by offering either single workstation or small workgroup coverage. In addition, both devices provide this coverage at an attractive

price point, particularly in light of their feature sets, which also include such additional functionalities as SNMP controls; the ability to handle 7,200,

5,400, and 4,200rpm drives; forced-air cooling; and the choice of 5V or 12V SATA power connections.

"Accordance is targeting a sweet spot for business [by offering] a layer of enterprise functionality at an economical price point," Warrene says. "This will help smaller enterprises in putting 'bigger iron' capabilities to work on their systems." ■



because of virus issues and data corruption, among other things. However, the ARAID M200 and 2200 are effective solutions because unlike other RAID 1 arrays, users can physically replace their standard 2.5- or 3.5-inch SATA hard drives within moments, even while a computer or workstation is accessing them. Because of this ease of use, users often rotate through half

BayTech®

||||

www.baytech.net

33 Years Made in the USA

Automatic Transfer Switch—ATS



Standard Features

- Out-Of-Phase Source Switching
- 8-15ms Switching Time
- Programmable Dropout Voltage
- Programmable Switchback Voltage
- SNMP And HTTP With DS-Series
- PCB-Based Reliability
- Reports Volts, Current, Watts, VA
- Break-Before-Make Transfer

Provide Redundancy To Single-Corded Devices With The Ability To Switch Out-Of-Phase Sources In 8 To 15ms.

Providing redundancy on the power-circuit level is critical to maintaining uptime. The ATS Series provides a simple and reliable solution for automatically sensing power loss and seamlessly switching to a backup circuit. BayTech ATS transfer switch line offers a unique approach to performing the transfer by completely severing the connection between the source and load then waiting for the zerocrossing to perform the transfer. This is the driving force behind being able to perform out-of-phase transfers with

a low-cost solution. Monitoring Power on the ATS is a unique feature which provides information about:

- Amperage Load
- (Watts) True RMS Power
- Volt-amps
- Voltage
- Internal Temperature

By combining the ATS and the DS-Series, console server alerts on power and transfers can be sent via secure SNMP V3.

DS-RPC Remote Site Management Series



Device Management

- Console Port Management
- Remote Power Control
- True RMS Voltage/Current
- SNMP Support
- HTTP Power Control
- SSHv2/SSL Secure Access
- RADIUS Authentication
- Direct TCP Port Access
- Telnet/SSH Menu Device Selection
- Device Port Naming
- Individual Port Password Assignment

BayTech's DS-RPC Remote Management Series provides secure and reliable management for your network, servers, and console ports. The DS-RPC combines the powerful combination of power management and console access. The cost-effective DS-RPC Series is meant for single connection applications. Security features such as

SSH v2, RADIUS authentication, SNMP, and user access lists per port allow system administrators to remotely manage the DS Series with greater confidence and control. The selected host module provides either secure in-band or dial-up out-of-band access to your DS-RPC Series remote management solution.

CASE STUDY

Offload Email Archiving

Outsourced Email Backup & Archiving Helps Software Firm Save Money, Headaches

by Sue Hildreth

AN ORGANIZATION’S email server contains critical business content. But backing up and archiving weeks or years of email messages is a time-consuming, expensive, and, too often, unsuccessful task. One alternative is to outsource your email archiving to a services provider.

That’s the route that FaxCore (www.faxcore.com), a maker of network fax software, decided to follow last year. Like just about all companies these days, FaxCore is heavily dependent on its email for communication and business transactions, including contracts and vendor agreements. The company had been doing tape backups, but President Tom Linhard wasn’t entirely comfortable relying on the company’s own backups.

“I was concerned that, if we did have a mail server crash, or if we had to dig up an old email, it would be a problem. I could never feel comfortable that the tape was going to be good [or] done on schedule, or that we could find a lost email easily if we had to,” says Linhard, noting that the com-

pany sends and receives about 1,000 messages daily. “To find an old email would mean digging through various tapes.”

Email Backup, Archival

Two years ago, Linhard came across MXsense (www.mxsense.com), an email backup and archival service that provides customers with a Web interface, email indexing, management tools, and search tools for finding old messages. The Web-based system supports Microsoft Exchange and Outlook and lets users search both current and archived messages.

The MXsense service indexes all emails and attachments and stores them in an offsite data center. The offsite storage provides a disaster recovery solution for FaxCore, and the archival software and search tools have made sorting through old email content much easier than sifting through stacks of tapes.

“It made sense to have it automatically archived in an offsite location,” says Linhard. “Now, whenever I get an email, a duplicate is automatically sent to MXsense and archived there. I get 50 to 100 emails a day, which can make for a big inbox. But with the archiving, I’m able to delete the older emails and keep the inbox manageable.”

The automation and Web interface of MXsense made its \$300 per month price seem like a good deal to Linhard when compared to the cost of additional tape storage, plus the manpower to handle the backup, store the tapes, and sort through the tapes later when in need of a specific email.

The move to MXsense has paid off in small ways for FaxCore, such as in a recent disagreement with a support vendor that wanted to bill FaxCore \$750 in penalties for renewing its contract after the deadline.

Back Up Business Content

FaxCore still backs up other business content on its own systems, doing incremental backups of the accounting data and FaxCore’s fax product documentation. It also does an incremental backup each night of the Exchange server.

However, those tapes are stored onsite, so in the event of a disaster, they would be destroyed along with all of the other business data. Having the emails saved and archived in an offsite location serves as a guarantee that FaxCore won’t lose anything that has passed through the email server.

“We realized that if nobody was taking the tapes home at night, we’d probably be wiped out,” says Linhard. “If all of a sudden our tape backup system wasn’t working, at least our emails are safely archived. Pretty much all of our critical documents other than finan-

cials and billing are sent and received via email,” he says.

The MXsense system is also easy to use and administer, making it ideal for a small company such as FaxCore, which has 25 employees and just two people dedicated to internal IT. The Web interface also makes it simple for FaxCore users—most of whom are either application developers or at least tech savvy—to navigate the archives and do searches.

Linhard says MXsense is also useful when he travels, which he does fairly often. Because the service is accessible via the Web, Linhard can access his current and past email from any device with an Internet connection and browser.



Because FaxCore had emailed the contract by the deadline, it was able to prove it by digging up the original email in the MXsense archive. That saved the company the extra fee and the headache of reinstating the contract.

FEATURED PRODUCT

contact

ScaleMP
(408) 342-0330
www.scalemp.com

ScaleMP vSMP Foundation 2.0

ScaleMP Lets You Construct One Virtual SMP From Multiple Off-The-Shelf x86 Servers



by Blaine Flamig

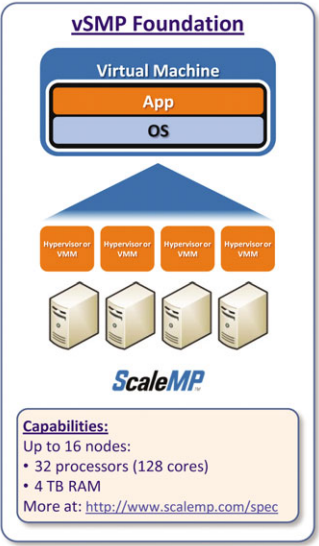
AGGREGATE. Scale. Simplify. Save. That’s the concept behind ScaleMP’s patent-pending vSMP Foundation software, which aggregates multiple x86 servers into one high-performance computing virtual SMP (symmetrical multiprocessor) system.

With the new vSMP Foundation 2.0, ScaleMP added support for the new Intel Nehalem processors and Emulex LightPulse Fibre Channel HBAs, enhanced partitioning abilities, extended remote-management capabilities, and improved profiling abilities across the entire system.

Unlike a traditional server-virtualization approach in which one physical server appears to operate as multiple logical servers, vSMP Foundation combines multiple off-the-shelf x86 system boards and chipsets into one larger, industry-standard SMP system. Using this approach, vSMP Foundation exceeds a traditional SMP’s performance at far less cost while simplifying the implementation of clusters, in terms of installation and on-going management costs.

vSMP Foundation 2.0’s support for Intel Nehalem CPUs lets users aggregate up to 16 x86 Nehalem systems into one shared system supporting up to 32 processors (128 cores) and 4TB RAM.

vSMP Foundation 2.0’s new partitioning capabilities let users partition an aggregated virtual system into eight smaller, concurrent partitions, with each able to run its own OS. Emulex LightPulse support provides additional SAN-based data center connectivity options. Support for redundant InfiniBand switches in active-active configurations allows for automatic failover on link errors or switch failures, all while maintaining load balancing between redundant switches for better overall performance. [E]



Prepare For The Unexpected With Room Alert™

No one knows when or how disaster will strike. We just know the potential is always there. So preparation is crucial to minimizing its impact on computers, networks, users & business.

When disasters occur, there are significant costs in areas that go far beyond the simple replacement of damaged hardware. This is because what happens in the data center or other facility effects the entire organization. If disaster strikes your facility, how will it impact business? Who will get the blame? Could it have been prevented? What will it cost?

AVTECH has a full line of powerful, scalable Room Alert solutions for real-time environment monitoring in a computer room, data center or other facility. All models arrive assembled with easy to install hardware, cables, sensors, easy-to-use logging & alerting software, printed documentation, unlimited technical support and a ‘30-Day Satisfaction Guarantee’. Users can typically install in under 10 minutes.

Room Alert products monitor critical environment conditions like temperature, power, humidity, flood, smoke, room entry, air flow, motion and more, alert staff by any method and can take automatic corrective action. There is a model that is right for any organization and budget... yours too!



Solutions Start At \$275

Room Alert products can monitor:

- Temperature
- Humidity
- Heat Index
- Main / UPS Power
- Flood / Water
- Room Entry, Motion
- IP Network Cameras
- Smoke / Fire
- Air Flow
- Sound, Light
- Panic Buttons
- Dry Contacts
- Switch Sensors
- Wireless & More

Call or Visit Us Online Today



888.220.6700 • 401.847.6700
AVTECH.com

Protect Your IT Facility... **Don't Wait Until It's Too Late!**™

* AVTECH is the worldwide leader of IT & facilities environment monitoring products. Purchase online at EnvironmentMonitor.com. Reseller inquiries welcome.

“We’re an international company, and I’m traveling probably 40% of the time. Since MXsense is Web-based, I don’t have to be at the office to recover things,” he says.

MXsense employs EML encryption (AES 128-bit) for Internet transmissions and 128-bit encryption for the databases to protect customer emails from hackers. To ensure quality performance, the company has a federated SQL farm on the back end and a load-balanced Web server farm on the front. The MXsense service provides full-text indexing of the entire email and attachments, as well as an OCR engine and text crawlers.

Addition To Its Own Product

FaxCore is also looking at email archiving as a possible future addition to its own product, which enables faxes to be sent from an email or CRM application. Integration with MXsense would let a business maintain an archive for business documents sent to customers and suppliers without having to buy a lot of storage hardware to do it. It would also enable the business to search through the faxes, much like searching the email archive.

“Our customers could have their faxes automatically archived and put through an OCR reader so the text is searchable,” Linhard says. “It’s an interesting idea that we hope to be able to launch in the next few months.”

Certain industries are more likely to be interested in archiving and searching faxed documents, he says. Those include health care, insurance, finance, and transportation because they are particularly reliant on paper and faxing to conduct business.

“I can see a major airline, for instance, wanting to automatically archive all of their faxes, and then use a Web-based program

to search for them. It would save them from adding disk space for servers and make the faxes searchable,” he explains.

For FaxCore, the online archiving has meant the ability to rely on email content in a way it hadn’t been able to before. Now that messages and attachments are archived and searchable, rather than scattered randomly in inboxes and on USB drives, the staff can count on the email being available when it’s needed and can use it more reliably.

“MXsense has given us the capability to do split-second searches of millions of emails, which has empowered our sales team to be much more efficient. We can now leverage our email information store, which can go back several years if necessary, to retrieve business correspondence with customers,” Linhard says. 

MXsense

An email backup and archival service that provides a Web interface, email indexing, management tools, and search tools for finding old email messages.

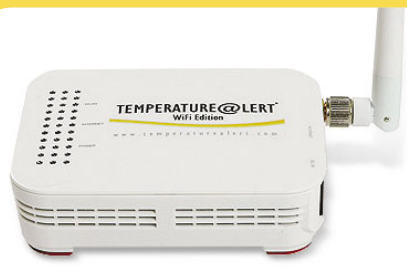
“MXsense has given us the capability to do split-second searches of millions of emails, which has empowered our sales team to be much more efficient. We can now leverage our email information store, which can go back several years if necessary, to retrieve business correspondence with customers,” says Tom Linhard, president of FaxCore.

(732) 917-2110
www.mxsense.com

TEMPERATURE@LERT[®]

USB TEMPERATURE MONITOR WITH EMAIL ALERTS

Temperature@lert monitors the ambient temperature and alerts you via email when it rises or falls outside your acceptable range. The temperature sensor is accurate to within ±0.5°C and can report temperatures from -40°F to +200°F. The customizable alert message can be sent continuously or just once when an alert is triggered. Real-time graphing and XML support provide you with the tools you need to integrate temperature readings into Web sites and other third-party applications.



USB Edition • \$129.99

- > Connects to your PC via an available USB port, so it never needs new batteries or an AC power adapter
- > Notifies you via email of changes in room temperature
- > Precalibrated sensor
- > Runs on all Windows platforms
- > Logs to TXT, temperature graph, event log, and XML
- > Runs as a Windows service
- > SNMP support
- > Easy integration with IIS
- > Includes free software upgrades for one year
- > Choose degrees Celsius or degrees Fahrenheit
- > Support for SMTP authentication
- > Free shipping

Wi-Fi Edition • \$299.99

- > Connects to your network via 802.11b/g wireless and is powered by an included AC wall adapter—no computer required
- > Notifies you via email of changes in room temperature
- > Precalibrated sensor
- > Includes free software upgrades for one year
- > Logs temperature readings to text and XML
- > XML data can be easily integrated into custom applications
- > Real-time temperature graph
- > Choose degrees Celsius or degrees Fahrenheit
- > Support for SMTP authentication
- > Expansion jack for humidity sensor (coming soon!)
- > Free shipping

Temperature@lert • (866) 524-3540 • www.24sensor.com

Some Machines Defy Obsolescence...



In an age of planned obsolescence, **some machines** are worth preserving, restoring, and updating. At IGS Systems, that is exactly what we do for your **DEC[®] Alpha & Storageworks applications.**

- Refurbished and Remanufactured Hardware / Software
- Repair/Exchange Services
- End of Life Support
- VAX / Alphaservers & Workstations
- Migration Service
- VAX to Alpha Migration
- VMS to NT Migration
- Alpha to Intel Migration
- Alpha / NT to Alpha/Linux Migration
- Enterprise Computing Services
- Storage Area Network Design, Configuration and Integration
- Enterprise Backup and Storage Management Solutions
- VMS Cluster Design and Implementation

Parts, Service, Repair

IGS is the world’s largest independent remanufacturer and source of supply, service and depot repair of obsolete—even recently obsolete—Digital Equipment Corporation[®] parts, products and systems.

Servicing Fortune 500 companies and many government agencies (including the United States Postal Service and NASA) we supply mission critical parts and components.

Extensive Inventory

At IGS we maintain an extensive inventory of DEC parts and equipment. Some date from as far back as the 60’s, but we also support products manufactured as recently as last year. We refurbish and service these parts adding current technology when applicable. Our multimillion dollar inventory, coupled with our worldwide sourcing expertise enables us to fulfill your requirements rapidly and cost effectively.

Quality Assurance

You can’t afford anything less than ZERO DEFECTS—and neither can we. That’s why we maintain the most advanced test equipment and thoroughly test every part before shipment. This is why customers like the U.S. Postal Service have trusted us for years to service and supply products for their 365 sites.

Our approach to customer satisfaction is straightforward—we provide quality products, on time, at highly competitive prices coupled with unparalleled service.

24 Hour Turnaround

We provide Advance Replacement Service within 24 hours if we have the item in stock, and with 75,000 stock items, chances are we will. That stock includes an unmatched inventory of parts and components, right down to assembly level devices.

The IGS Systems Advantage

Our technical capabilities, coupled with our highly experienced sales staff enables us to cover the spectrum of our client’s needs, from obsolete parts and products - to leading edge refurbished Systems, a veritable “One Stop Shop” - the only one of it’s kind in the industry.

If you have any questions please contact Bobby Ahearn, CEO of IGS Systems.
(508) 866-1171 x235
Fax: 508-866-4500
Visit us at: www.decparts.com



FEATURE PACKAGE

Data Center Best Practices

What can you do to improve your data center when it comes to backup, overall design, air management issues, and supporting telecommuting employees?

Best Practices For Backups | 24

■ Data backup, long the forgotten sister of data center operations, has grown in prominence as data becomes increasingly central to business competitiveness and survival.

Telecommuting Best Practices | 25

■ Thanks to a profusion of Web-based tools and resources, it's easier than ever to telecommute, but that doesn't make IT's job a cinch.

Crucial Elements In Data Center Design | 26

■ Designing a data center is fraught with stumbling blocks, but you can follow a set of best practices to ensure that the facility you build is a success.

Smart Air Management & Circulation | 27

■ Computer rooms originally designed for bulky servers with a few systems per rack are struggling to handle an influx of new equipment that's sucking power and generating heat. That's why better airflow management is needed.

Best Practices For Backups

Smart Technologies & Procedures Are Key To Efficient Backups

by Carmi Levy
• • •

DATA BACKUP, long the forgotten sister of data center operations, has grown in prominence as data becomes increasingly central to business competitiveness and survival. It's no longer enough to rely on a key employee bringing a backup tape home every night. Data center managers must look at backup in a broader context. Finding another way to describe it might be a reasonable place to start.

Key Points

- Don't just back the data up; restore it, too, and test this capability often.
- Align processes with business needs to avoid coverage gaps.
- Make the business case to senior leaders by quantifying data's value, as well as the nonquantifiable costs to the organization if it's lost.

"We should be focused on data recovery, and more important than that, we should be focused on business recovery," says Kelly Lipp, CTO of STORServer (www.storserver.com). "More than just backup, we need to ask ourselves how we get back to doing what it is we're supposed to be doing in the event of a failure and how we do that quickly."

Manage The Human Point Of Failure

Traditional data backup processes simply can't keep up with today's business needs. The human factor is often a critical point of failure.

"Take the simple example of nightly backups," says Avocent CTO Ben Grimes (www.avocent.com). "If for some reason the person who's been assigned to that task has to go home early one night for an emergency, the backup doesn't happen. There's no automated process in place to ensure your policy is enforced."

Overreliance on manual processes opens up exposure on a number of levels, including disaster recovery and compliance. It also consumes resources inefficiently, which carries an opportunity cost, as well.

"Repeated studies indicate that the biggest cause of lost data or system downtime is human error," says Matthew Parker, a project manager with Stantec (www.stantec.com). "No matter how well facility backup systems might be designed, we can't

eliminate human error. Properly maintained data backups can ensure that if support equipment fails to operate as intended, recovery times will be minimized."

Plan For The Worst

Greater use of automation also frees IT resources to add more value in other areas. "Most people simply have difficulty accomplishing any kind of backup and struggle mightily just with that," says Lipp. "Because they're so involved in these tactical actions, they don't have any time to think about what they would do in order to recover. This near-sighted view of backup leaves IT organizations unable to focus on strategic planning, which would add value to—and reduce risk for—the rest of the business."

Better strategic planning helps IT more thoroughly understand the business context of data backup. Kevin Watkins, vice president of tri-state engineering with Presidio Networked Solutions (www.presidio.com), says that before investing in improvements to backup capability, companies must first understand how backups can fail:

- The backup exceeds the allowable window, resulting in an incomplete backup.
- The backup encounters a problem, resulting in a corrupt or incomplete backup.
- Remote sites or servers remain outside of the backup process and are not properly backed up.

Any one of these can leave the organization without the ability to restore in the event of a disaster. Even when backups work as indicated, they may not be enough to effectively support business operations.

"During a recent upgrade, a client unexpectedly needed to restore from tape due to

an unforeseen issue during the upgrade," says Watkins. "The tape was mounted but had not been verified. As a result, the customer had to go to the last good tape, which turned out to be 30 days old, and rebuild the interim data by hand," a process that



took an additional two weeks and 100 person-hours of effort to complete.

Re-evaluate Your Backup Process

Situations like this reinforce the value of shifting from reactive to proactive backup.

"You have to admit you have a problem," says Lipp, "that patching things up every six or 12 months isn't working and it's now time to re-evaluate your technology. It might mean you have to start from scratch, but if getting off the backup bandwagon means implementing a system that works once and for all and is absolutely scalable for your needs, then that's how you'll move forward."

Once you grab the reins and implement more effective backup solutions and processes, make sure your operational processes keep pace.

"You have to measure and monitor the backup environment to make sure it's up and running," says Grimes. "I've seen so many cases where companies were able to back up but not restore, where they've tested

their replication but never tested the restore side. These should be built into your data center's day-to-day management processes."

Make The Business Case, Carefully

Convincing decision makers to fund a more robust backup capability is always challenging because its benefits aren't always easy to see. And larger organizations with extensive data centers packed with the latest hardware are just as vulnerable to backup weaknesses.

"This capability seems to vary more by the maturity of the IT organization than by its size," says Grimes. "I've seen a lot of companies that have grown dramatically over the years. And to fuel that growth, they need more and more computing power and ended up throwing more equipment into the data center. But they didn't build mature IT processes around them, so they ended up with large data centers and a relatively immature ability to manage them."

Sometimes, the lessons are hard-won. "Often, companies have to get really mature really quickly after they've had their first failure," he says. "Of course, by then it's too late. They realize, belatedly, that it's a form of insurance."

He recommends approaching decision makers before any loss occurs to frame it in this context. "Nobody buys airbags for their cars—they just come as part of the package—but you sure want them to work when there's an accident," says Grimes. "You have to explain it to your decision makers in similar terms. If their CRM data, for example, is what drives the business and defines its value, have them quantify and qualify their exposure if suddenly tomorrow they don't have it anymore. Talk about it in terms of the fear of loss." ■

Biggest Improvement: Prioritize Your Backups

Don't assume all infrastructure needs to be treated the same way. Work with your business areas to prioritize equipment, data, and applications and assign resources accordingly. Non-mission-critical applications, for example, may not require immediate failover or restore. Save your most time-sensitive and costly backup-related resources for the infrastructure that absolutely needs it.

Telecommuting Best Practices

Improve Efficiency By Streamlining Support, Security & Management

by Elizabeth Millard

THANKS TO A PROFUSION of Web-based tools and resources, it’s easier than ever to telecommute, but that doesn’t make IT’s job a cinch. With so many security concerns and management issues, making sure that telecommuters are set up properly and working efficiently can be a daunting task. Here are some best practices to make the process more streamlined.

Take Control Through Remote Management

The ability to take control of an employee’s computer is useful in numerous ways,

Limit Capabilities

In addition to remote management, creating limits on device usage can be a boon for security, Cavalancia adds. Employees working from home or another location may be handling large amounts of confidential data, and routing that through a VPN or a removable storage device can put a company at risk for a breach without a protection strategy in place.

Cavalancia believes that IT administrators should implement a solution that could support granular control of USB ports, giving employees access to the information they need while protecting data on the device.

Key Points

- Use remote management in order to have a high level of control over employee devices.
- Employ Web-based applications to create consistency across the organization.
- Revamp equipment in order to handle increased system usage by telecommuters.

the telecommuter needs access from several different locations.

“A virtual or hosted desktop architecture maintains the desktop in the data center and allows full user access from anywhere,” says Mike Palin, CEO of Leostream (www.leostream.com), a developer of virtual hosted desktop software.

He adds, “Centralized control eliminates many ‘desk-side’ visits and greatly reduces overall time spent by IT staff on support in such areas as help desk, backup and archiving, user administration, hardware and software configuration management, and patching and license management.”

In particular, Palin notes, there are three main benefits of using virtual or hosted desktops: centralized control, risk management and security, and resource savings. SMEs can create policy-controlled access to centralized data and applications, which protect against loss and liability. Also, uniform malware protection can be applied rather than pushed over the network to telecommuters’ machines.

In terms of resource savings, virtual and hosted desktops offer energy savings, Palin believes, through the use of low-wattage thin clients and more efficiently cooled bladed workstations.

Employ Web-Based Apps Across The Organization

One of the trickiest parts of having telecommuters at a company is the control of

The three main benefits of virtual or hosted desktops are centralized control, risk management and security, and resource savings.

data flow and storage. At some companies, remote workers might upload changes to a database while in-house employees also create additions or changes, and the “single version of the truth” suddenly becomes complicated.

A best practice for avoiding this tangle is to get all employees on Web-based applications that have databases or documents that can be modified in real time. These types of apps also tend to be less expensive, given upgrade and deployment costs, and can be used across numerous types of devices, according to Martin Schneider, director of product marketing at SugarCRM (www.sugarcrm.com).

This approach can also reduce the need for standardizing on a single device type. For some companies that allow telecommuters

Go to Page 26

Google Receives Patent For Floating Data Center

Google was recently granted a patent for a floating data center that it proposed in February 2007. The search giant published information about the proposal in October 2008, describing its concept of a data center barge that would float 3 to 7 miles from the shore on a ship or platform and use ocean waves to provide power and cooling for the data center. Galen Schreck, principal analyst at Forrester Research, says that in addition to an offshore data center, it is possible that the floating data center would remain dockside, “tied up in a harbor area.” Previously, Google proposed a patent for a data center housed in a shipping container, which it began deploying in 2005.

Why Floating?

The use of floating data centers would address many issues that arise when building data centers, such as the cost to build on expensive coastal-area land. The hope is that a floating data center would be free of property taxes. A data center in the water would also make it easier to provide high-bandwidth connections to areas that don’t already have them, for a lesser cost to users. “It would be an interesting way of positioning a lot of compute power close to where the demand is,” Schreck says. “It would certainly have a lot of potential for congested urban areas on the coasts or Great Lakes.”

Whether Google will produce its floating data center in the near future remains to be seen. The project seems feasible in the long term, despite possible difficulties. “Aside from the very new concept of wave-based power generation, I think the next biggest issue would be getting enough network bandwidth to a floating data center,” Schreck says, adding that any data center barge would be subject to damage from the ocean. “Marine environments are very harsh, and any floating data center would need to come in for periodic maintenance,” he says. Still, the potential for a floating data center would be promising, especially for data center expenses. “Electricity is becoming a major part of the expense of running a data center. Alternative energy sources, like waves, should solve that problem, as well,” says Schreck.

by Kristina Glaser

from troubleshooting a hard drive problem to shutting down access in the case of theft. Remote management tools abound in the marketplace and can link up a home office with a remote office easily.

“Adoption of third-party tools ensures that remote workers have access to a standardized network environment and the information they need to be productive,” says Nick Cavalancia, vice president of Windows management at ScriptLogic (www.scriptlogic.com), a desktop management firm. “IT administrators can troubleshoot users’ PCs within seconds from a central location, which eliminates the need for remote users to talk through issues via the phone.”

Enforcing control over each device type, such as USB devices, can restrict users to “read” but not “write” and can even determine what type of USB can be used. “As a result, this gives companies the ability to determine who on the network has permission to use certain devices based on their group, computer class, type of device, or any other established factor,” Cavalancia says.

Use Virtual Or Hosted Desktops

Another best-practice management strategy might be to utilize virtual desktops, usually through the use of a connection broker. This tactic can be especially good if

attackers targeting data warehouses and Web applications.

To stay protected, James advises that companies create multiple security levels and especially stay on top of telecommuter user behavior. For example, an employee who does public relations suddenly downloading sensitive sales data and customer information would be the type of red flag picked up by a database monitoring application.

Biggest Improvement: Track User Behavior

With remote management and Web-based applications, there needs to be a fair degree of openness between IT and a telecommuter’s site, so it’s necessary to increase security efforts, especially with the number of attacks that target corporate data.

According to Anthony James, vice president of products at security firm Fortinet (www.fortinet.com), a strong trend in the security space is

Crucial Elements In Data Center Design

Sticking To Some Best Practices Can Ease Your Design Process

by Bridget Mintz Testa

DESIGNING A DATA CENTER is fraught with stumbling blocks, but there are many best practices that you can follow to ensure that the facility you design is a success. Planning ahead and looking at your enterprise’s needs and limitations, for example, are important steps to take, or you may decide to let someone else handle it altogether. Here is a closer look at some best practices to keep in mind as you design your data center.

Plan Ahead For Power & Cooling Concerns

Planning an effective cooling system for your facility is imperative as equipment becomes denser and more power-hungry. “As you move to higher-density equipment, cooling is an issue,” says Kenneth Wolverton, vice president of data center operations at colocation company CyrusOne (www.cyrusone.com). “But at certain densities, heat wraps around and affects your cooling side, so cooling must be designed carefully to avoid

Biggest Improvement: Consolidate With Virtualization

New technology is great in that you get a lot more computing power per square foot, but it comes with its own problems. With higher rack densities, “there’s a new availability dynamic,” says Zurica D’Souza, senior product manager for APC by Schneider Electric (www.apc.com). “Heat has become a factor.”

How can you deal with that? “Consolidation is the only way to overcome this problem,” says Kenneth Wolverton, vice president of data center operations at CyrusOne (www.cyrusone.com). “Most servers sit idle 70 to 80% of the time. The answer is to virtualize the server. Get it so it’s idle only 15% of the time. That way, you go from 15% productivity to 75% or 85% productivity.”

Virtualization works by loading software on a server so that it emulates multiple servers. “It allocates the resources to do the work of several devices,” Wolverton says. Of course, this does increase the risk of losing that particular box, so it also raises your need for redundancy. “If you take 10 boxes down to two for redundancy, you’re still saving on both equipment and operating costs.”

Key Points

- Evaluate your IT load and trends first and design around them.
- Consider modular implementations to maximize your availability, total cost of ownership, and return on investment.
- Outsourcing data center projects may be smarter and cheaper than doing it yourself.

wraparound.” Wolverton recommends calculating cooling parameters by using computational fluid dynamics, which shows how air flows around racks.

Because you must compensate for the heat produced by your IT equipment, it’s essential to know that load, according to Chris Crosby, senior vice president of sales and technical services at Digital Realty Trust (www.digitalrealtytrust.com). Whatever else you do, don’t simply add up the faceplate ratings of your equipment. Crosby says those numbers can be off by as much as 70%.

Instead, Crosby says to get real data. “You know what [the electrical load] looked like when you put in your new equipment, [and] you know what it looks like now and what it looks like when you refresh the equipment,” Crosby says. “You’ll also want to know what it looks like in the winter, the summer, and any other time. The more time, the better.” Don’t use industrial “standards,” either, he says; evaluate your own situation across the whole data center by using the electrical meter. Without knowing your IT load and trends, Crosby says, “You’ll make bad decisions, no matter what you do.”

You also don’t want to over-design your data center. Crosby cites a common small-business scenario of a 50-rack data center that draws 100kW: two racks drawing 4kW each, one hard-to-cool rack drawing 8kW, and the other racks all drawing 1kW or 2kW each.

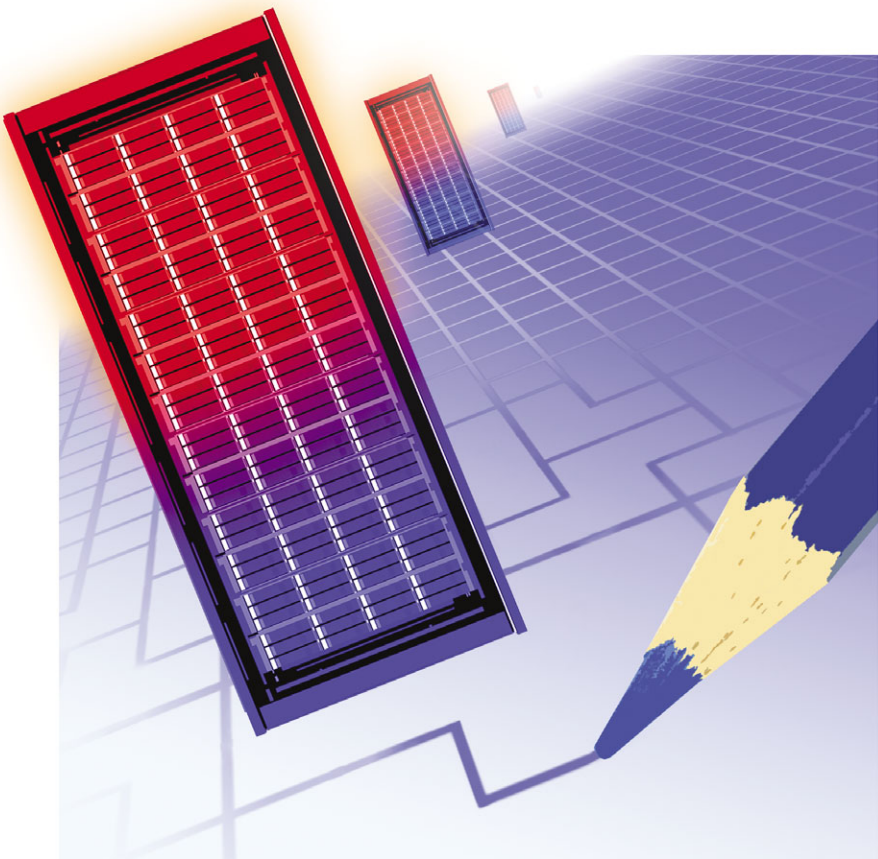
“Look at your total IT load, not just that one 8kW unit,” Crosby says, explaining that you don’t want to design for 150 watts

per square foot if you’re only using 100 watts per square foot.

Power and cooling are also critical in considering the trade-offs small enterprises must make in designing data centers because they have a direct impact on reliability and risk. If cooling is insufficient or power fails, then IT equipment can fail, which can shut down a business. “You must plan cooling with risk management in mind,” Wolverton says. “If you can’t ever go down, like a hospital, your data center must have a fairly high degree of redundancy. If you’re running something that’s not mission-critical, you can tolerate more risk.”

Implement “Right-Sized” & Modular Solutions

It’s these trade-offs that cause uncertainties for data center designers. “Small and medium-sized businesses are more agile with respect to change than large companies, but they are very budget-restricted,” says Zurica D’Souza, senior product manager for APC by Schneider Electric (www.apc.com). More redundancy in power generation and cooling equipment reduces risk



but increases costs. Over-building for power usage and cooling also reduces risk, but it also reduces efficiency and increases life-cycle costs.

“On the power side, we advocate ‘right-sizing’ or utilizing the power you need,” D’Souza says. In fact, she recommends this across the board. In practice, this means using what D’Souza calls “modular scalable solutions,” where you buy the equipment you need today but plan ahead and

leave space available for what you’ll need in the future. “Nonmodular implementations are cheaper at first,” she says, “but take longer to bring up if there’s a failure. They cost more to repair and upgrade. Modular scalable solutions have better management. They can tell you the size of your power load [and] if any events are occurring, and you can repair and replace them in real time.”

With modular scalable architectures, D’Souza says availability is more affordable “because you scale up as you need it.” Compromising on availability has consequences. Beyond the time and high costs involved in repairing or replacing a single-power-module data center, it also leaves a business with little flexibility for growth. “The modular scalable approach delivers maximum value for your data center,” she says.

D’Souza says the modular approach also reduces total cost of ownership. “We tend to focus on the now and on ‘What do I have to write a check for today?’” D’Souza says. “I might have to write a small check today, but how many checks will I write? Look at the total cost of ownership, a total lifecycle approach.”

Consider The Outsourcing Option

If all of these trade-offs seem too complex and time-consuming, there’s an alternative: Outsource the design and build of your data center to experts. “It takes 18 months from planning through construction to complete and build [a data center],” says Jason Schafer, senior analyst for data centers at Tier1 Research. And capital is

expensive: Schafer says every square foot of a 10,000-square-foot data center that consumes 150 watts per square foot costs \$2,000 to build. Bigger data centers in the 65,000- to 75,000-square-foot range cost less, around \$1,200 to \$1,300 per square foot.

“It’s not cost-effective for small and medium-sized businesses to [do it themselves],” Schafer says. “It’s better to go with a wholesale provider. You may not get the customization you want, but [providers] have a process and can drastically reduce delivery time from 18 months to do it yourself to as little as six months.” If you don’t want to go with a wholesale provider, Schafer says you can look at a colocation provider, which are often customers of wholesalers and also frequently work with managed services vendors.

If you choose to go this route, make sure to vet the providers. Don’t believe their claims about availability until you check it out at sites such as the Uptime Institute, which actually certifies tier levels. Crosby recommends talking with a variety of providers, even if you plan to build it yourself. ■

Telecommuting Best Practices

Continued from Page 25

to use whichever smartphone or PDA they like, this can be especially helpful. Application developers have also been tweaking their offerings with this in mind, Schneider notes.

“Many of the next-generation application providers are moving towards these ubiquitous models, where a Web-based architecture serves as both a traditional and mobile platform,” he says. “This means that organizations can roll out

traditional and mobile application initiatives simultaneously and for no additional costs.”

Upgrade Equipment Or Limit Access

Cost savings can be realized by utilizing browser-based mobile functionality, but the strategy won’t be as effective if systems can’t support the applications, Schneider says.

“[M]any companies have older systems in place that can’t support this type of

parallel development,” he says. Companies will likely need to ask whether to upgrade servers to handle the bandwidth and traffic issue or to limit mobile access.

That decision will all depend on the business case rather than IT goals, he notes. Giving mobile access to in-house employees who don’t travel, for example, might be a nice perk, but it’s likely an unnecessary use of resources, particularly if hardware upgrades are involved. ■

Smart Air Management & Circulation

Best Practices To Keep Increased Thermal Loads From Stressing Computer Room Air Systems

by Kurt Marko

GLOBAL WARMING isn't just a weather phenomenon—many IT managers are facing their own versions of climate change inside increasingly packed data centers. Computer rooms originally designed for bulky servers with a few systems per rack are struggling to handle an influx of new equipment that's sucking power and generating heat.

The Lawrence Berkeley National Laboratory, or LBNL (www.lbl.gov), has been studying energy usage by high-tech industries since the mid-1990s with the goal of benchmarking performance and developing technologies, tools, and strategies for improving overall efficiency. Culling information from 22 data centers, it established a set of best practices that many other organizations, such as Pacific Gas & Electric and the Climate Savers Computing Initiative, have used as the basis for their own design guidelines.

According to PG&E, data center air management encompasses “all the design and configuration details that go into minimizing or eliminating mixing between the cooling air supplied to equipment and the hot air rejected from the equipment.” According to Michael Petrino, vice president at PTS Data Center Solutions (www.ptsdcs.com), airflow problems have a number of causes, including poor cabinet layout, bypass airflow from cold to hot aisles due to inadequate separation, improper placement of vented floor tiles, and cable clutter constricting air paths.

Use Hot Aisle/Cold Aisle Configurations

LBNL outlines two key strategies for achieving efficient airflow management: eliminating the mixing and recirculation of hot equipment exhaust and maximizing the return (exhaust) air temperature. The most basic and universally recommended tactic for efficient air circulation and reduced mixing is a hot aisle/cold aisle configuration. This entails laying out equipment racks in rows that alternate between air intake (cold aisle) and exhaust (hot aisle).

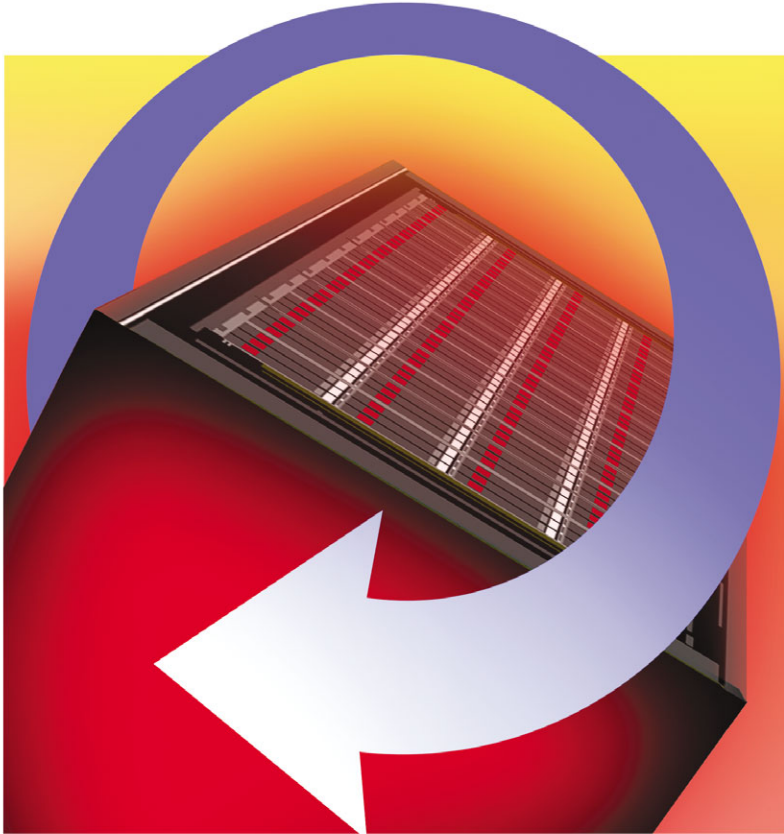
In order to reduce efficiency-sapping air mixing, it's imperative that most of the chilled air flows through active equipment; thus, gaps in racks and empty spaces above them and at the end of rows should be physically blocked. A number of vendors have developed easily installed products to assist with air isolation. Roger Jette, CEO of Snake Tray (www.snaketray.com), says baffles and adjustable panels can fill unused positions in equipment racks and “keep conditioned air in the right spot.”

Aftermarket products are especially important when incorporating older equipment with nonstandard exhaust patterns into a hot aisle/cold aisle configuration. However, if building custom ductwork is impractical, LBNL advises “configuring racks to ensure that equipment with side-to-side,

top-discharge, or other airflow configurations reject heat away from other equipment air intakes.” Racks themselves can also affect airflow, so it's important to select those with minimal internal obstruction. PG&E notes that specialized rack products with integral plenums that duct cool air directly from floor vents and exhaust to the return air plenum can enhance circulation and reduce mixing. Zach Wilson, executive vice president at NetStructures (www.netstructures.biz), says it's also important to use the shortest possible custom cable power and patch cords within racks and to minimize cabling under raised floors.

Increased Return Air Temperature

The second key objective to enhancing airflow efficiency is maximizing the return



air temperature. According to PG&E, “A higher difference between the return air and supply air temperatures increases the maximum load density possible in the space and can help reduce the size of the cooling equipment required, particularly when lower-cost mass-produced package air handling units are used.”

Peter Sacco, president of PTS Data Center Solutions, believes that the best way to understand and optimize a room's air distribution and temperature profile is by using CFD (computational fluid dynamics)

- Key Points
- A hot aisle/cold aisle configuration with strict air separation can double a data center's server cooling capacity.
 - Maximize return air temperature by supplying air directly to loads with appropriate air diffusers and proper room design and cabinet layout.
 - Minimize cable clutter with short, custom-made power and patch cables and cable trays both under raised floors and overhead.

simulations along with centralized, automated environmental monitoring.

Air diffusers on cold air vents can make a significant difference. LBNL's best practices note that “standard office-style diffusers, designed to create a fully mixed environment and avoid creating drafts, are inappropriate for data centers.” It adds, “Diffusers should be selected that deliver air directly to the IT equipment, without regard for drafts or throw concerns that dominate the design of most office-based diffusers.”

Overall System Design Guidelines

These supplemental tactics for improving airflow management and circulation may still not be sufficient for legacy data centers trying to handle today's loads. “You still need to have a fundamentally sound HVAC design,” according to Sacco. This means having adequate cooling capacity, sufficient fan volume for each rack, and a well-considered floor plan. As Petrino notes, “There are many products that block air, change floor pressure, use fans to direct airflow, and add additional venting capability; however,

used improperly, these products can create problems in other areas of the data center.”

According to PG&E, using best practices for air management can double the cooling capacity of a data center and, when coupled with air-side economizers, can reduce cooling costs by more than 60%. Many of these techniques, such as tidy cabling, proper air diffusion, hot/cold-aisle design, and increased air isolation between zones, need not be huge investments, and given today's electric rates, LBNL estimates investments payback in only three months. 

Biggest Improvement: Preventing Airflow Spillover

Assuming a well-designed hot aisle/cold aisle layout with adequate airflow, proper diffusers, and well-managed cables, the most significant improvement to air management is preventing air mixing and spillover from cold to hot areas. Flexible strip curtains, which can be nothing more sophisticated than those plastic refrigeration

covers seen in most supermarkets, are an effective means of restricting airflow around racks. Peter Sacco, president of PTS Data Center Solutions (www.ptsdcs.com), does advise caution before installing these above racks, however, because they may block fire suppression equipment such as sprinklers. He believes that

most of the benefits of hot/cold-aisle separation can be achieved by blocking air from spilling around row ends. PTS has found this is easily achieved by using overlapping thermal strip curtains between rows at the end of each aisle, a technique Sacco says is particularly effective in conjunction with in-row cooling.

News

Cyber Security Groups Launch New Initiative

Three cyber security groups have banded together to focus on securing the Internet and combating malicious software. The Chain Of Trust Initiative, comprised of the ASC (Anti-Spyware Coalition), the National Cyber Security Alliance, and StopBadware.org, will link together vendors, researchers, and government agencies, network providers, and education groups to establish a united front against malware suppliers. The group's first effort will be to map the network of organizations and people that are working on cyber security, and it will also focus on identifying vulnerabilities and on developing solutions to cyber security problems. It plans to issue a paper with initial recommendations in the next six months.



California Man Convicted For DMCA Software Violations

Adonis Gladney, a 24-year-old California resident, now holds the distinction of being the first person believed to have been convicted of DMCA (Digital Millennium Copyright Act) violations involving the bypassing of security protections on software. Gladney's conviction stems from selling thousands of counterfeit product keys for Microsoft software for volumes of between 25 and 750 users via Web sites he operated. The U.S. Marine Corps reportedly was among those who purchased illegal keys from Gladney, who shipped buyers a CD loaded with various Microsoft software and keys he altered so he could repeatedly reuse them. According to various reports, law enforcement officials seized about \$75,000 from Gladney, as well as two custom-built Lamborghinis. Gladney reportedly informed FBI agents he earned more than \$3 million via the illegal business.

Report: Homeland Security Data Centers At Risk

The Department of Homeland Security did not do a thorough job evaluating potential data center sites, according to a report released by the Department of Homeland Security Inspector General Richard Skinner. The DHS disaster recovery plans for hurricanes, power outages, and perimeter security, along with being within 2 miles of a NASA rocket test site, were not considered when a data center was set up on Mississippi Gulf Coast in 2006. In addition, the DHS did not properly assess the risk of placing a data center in Clarksville, Va., within several feet of two 25,000-gallon diesel fuel storage tanks. The report also says the data centers lack the interconnecting circuits and redundant hardware needed to actively back each other up and alternative processing sites for all of its critical systems. As a result of the report, the DHS will perform additional risk assessments.

Netbook Market Boom

Netbooks accounted for about 20% of all portable computers shipped during the first quarter, according to the latest figures from DisplaySearch. Netbook makers churned out 6 million of the mobile devices. Acer led the pack with a 30.5% share (1.8 million units), which was nearly twice as many as the 0.9 million units Asus shipped for the quarter. HP shipped the most traditional notebooks at 7.3 million units. About 45% of all netbooks shipped into EMEA, compared with 26% in North America. European sales were robust because of low-priced netbooks and data plans being offered by telecoms.

SIX QUICK TIPS

Maximize Data Tape Performance

Tune Your Tape Backups To Ensure Data Integrity & Protect Trusted Archives

by John Brandon

THE CONCEPT OF “maximizing performance” is quickly becoming a lost art in the field of data archiving. After all, although the bandwidth to and from servers

is increasing, the speed of tape backup is also on par or even faster than the infrastructure can support. In an age of fast tape systems such as LTO-3 and LTO-4, companies should look for other ways to maximize tape performance.

Whether it is monitoring disk speed and adjusting for the tape backup system, tuning storage arrays to avoid fragmentation, or upgrading equipment to the fastest tape standards possible, the benefit is that the tape backups will be reliable and fast, and employees can trust that their application data is safe and secure.

Match Tape Speed To Services

Rob Sims, president and CEO of Crossroads Systems (www.crossroads.com), says the infrastructure demands in a modern data center are typically state-of-the-art. He says the real issue is matching the tape systems to the data center device such that there are no mismatches, which can lead to data integrity issues or a critical problem in the current economic client: systems that sit idle and still use power. The concept is reminiscent of virtualizing servers, which maximizes data throughput per server and consolidates hardware to reduce overall power usage. With tape backup, maximizing can mean more than just performance—it can mean matching data center equipment correctly with the tape system.

“Match the number of tape devices (data streams) to the output capability of their backup and media servers,” Sims says. “For instance, just because the backup

server has a 4GB Fibre Channel port doesn’t mean it can read from disk and write to tape at full 4GB rates.”

Consolidate Data Before Backup

One expert tip is to use a tool to consolidate data before it ever touches a tape system in the data center. Gary Parker, a spokesperson for BakBone Software (www.bakbone.com), says the process of “shoe-shining” is where the data being archived is not properly tuned for the backup because the data transfer rate falls below a minimum

Although the bandwidth to and from servers is increasing, the speed of tape backup is also on par or even faster than the infrastructure can support.

threshold and the drive is constantly adjusting for the disparate data segments.

“The drive decelerates the tape, stops it, rewinds back a little, accelerates again to a proper speed, and continues writing from the same position,” Parker says. “This significantly affects the attainable data rate and places stress on the drive mechanism, increasing hardware failure rate. Tape is still needed for disaster recovery purposes, but holding it on disk builds up the amount of data to be moved, so it is an efficient

SIX QUICK TIPS

Assess Email Threats

Determine Enterprise Vulnerability To Viruses, Worms & Other Unwanted Critters

by Elizabeth Millard

EMAIL SECURITY EXPERTS and digital miscreants have been locked in a battle that’s not likely to end anytime soon—just as a new virus is whipped up, a protective response is created, but by then, the virus writer is onto the creation of a new threat. With so many worms, Trojans, and viruses, it can be tricky to separate the benign from the malignant. Here are some quick tips for assessing threats and keeping them in check.

Be A Pessimist

Technology management tends to include a good deal of hope—optimism about systems working well together, servers doing what they should, and support being offered in a timely fashion.

But when it comes to assessing email threats, it pays to think like a pessimist and

assume that whatever is coming in from an unknown sender poses a risk, says Mark Parker, senior product manager at Marshal8e6, a provider of Web and email security products (www.marshal8e6.com).

“The threats are being created and morphing so quickly that what worked yesterday doesn’t necessarily work today,” he says. “For example, the number of emails with viruses attached has declined significantly. Now the threats are blended between email and the Web.”

New threat emails will look completely benign to the casual observer, he adds, but once the user clicks a link in the email, he visits a Web page that will attempt to install malicious code. “Most new threat emails are socially engineered to fool even the most discerning eye,” Parker says.

The effective strategy is to have an SMTP (Simple Mail Transfer Protocol) gateway

product that provides the normal signature and spam protections, Parker says, coupled with an active investigative center that is capable of doing both direct and behavioral analysis of not just the emails themselves, but the Web sites linked to in the emails. “The investigative center should be updating the SMTP gateway product, as well as the Web gateway, on a frequent basis,” he adds.

Isolate The Email & Attachment

If a threat is detected, it’s a good idea to isolate the email and any attachment that

quick research online can lead to answers because security professionals may have encountered the same email and posted their findings online.

Employ Unified Threat Management

The most effective security defense for the SME is to employ a unified threat management solution, designed and optimized with multiple types of threat detection and mitigation tools, believes Steve While, senior engineer at content security solutions provider Optenet (www.optenet.com).

For example, he notes, an effective malware solution should include tools such as semantic language analysis; an image and video analyzer; and antivirus, antispam, and antiphishing, with all of it working together to detect and eliminate threats.

“Most new threat emails are socially engineered to fool even the most discerning eye.”

- Marshal8e6’s Mark Parker

might have come in along with it, says Fred Touchette, senior security analyst at AppRiver (www.appriver.com), an exchange hosting provider that offers managed virus, spam, and email protection.

The email and attachment can be put in a virtual malware lab that is off the network, where behavioral and possibly static code analysis can be conducted, Touchette says.

A malware lab usually consists of “victim machines,” support tools, network simulation, and analysis tools. Some companies have found that virtualization software can be used to reduce the cost of hardware and maintenance.

If it’s not feasible to create a lab environment, then Touchette notes that even some

“In addition, more advanced solutions take into account the source reputation, potential or likelihood of the threat to replicate and expand the targeted end points or users, and finally, the type of threat in determining the threat severity level,” While says.

Although a unified tool can be very helpful, make sure that it’s not the only approach being used to determine the severity of email threats, Parker says. “Small businesses should be careful in choosing their solutions,” he says. “There are several out there that promise to do everything in a single product, like email, Web, A/V, and it might even clean the office for you. The problem is that these products will do something about all of those potential problems,

BONUS TIPS

■ **Stay on top of threat assessment.** Assign one employee to do a morning sweep of news and information related to email issues, particularly around holidays or major events. Attackers tend to target large news items, such as

the presidential inauguration, for sending out emails, and they also take advantage of increased email activity around holidays, especially Christmas.

■ **Stay in frequent contact with vendors.** Vendors often

have security labs that first detect whether a threat is malignant or not. Vendors rate the severity of threats and risks, give its type (Trojan, worm, etc.), and also note when it was released into the wild.

process. A majority of restore requests are for data that is only a few weeks old. By keeping the active data on a disk for a few weeks, [it] makes the restore process simple.

Migrate To New Technologies

One common issue in data centers is that the legacy backup systems are causing slow-downs and cannot keep up with faster, newer equipment, such as servers and storage-area networks. Bruce Modell, a storage specialist at CDW (www.cdw.com), says that an SME should migrate to newer tape standards.

“Migrate away from proprietary tape systems or products that are no longer supported by vendors, such as DLT, Super DLT, and 8mm,” Modell says. “Technologies such as LTO-3 or LTO-4 provide you with a greater growth path and are supported by a wider array of vendors, while older technologies that are no longer supported are costly to upkeep and not worth the headache.”

Use Monitoring Tools For Disk Speed

Bob Conway, the HP Storage Platforms manager (www.hp.com), says companies should monitor disk speed to ensure that the tape backup is properly tuned for archives.

“Backup is more sequential in nature than random, from a disk array access perspective,” Conway says. “Disk array performance depends on the number of disks, RAID configuration, the number of Fibre Channel ports to access the array, queue depth available, and so on. [There are] several utilities to ‘read data’ from disk arrays and deliver a performance value. This enables users to determine the throughput of their disk arrays when operating in back-up mode and performing file system transfers typical of this activity.”

Best Tip:

Consider Network Storage Speed

Maximizing performance does not always mean increasing the speed of the tape system, says Rob Sims, president and CEO of Crossroads Systems (www.crossroads.com). In many cases, increasing network and storage speed from the original data is the critical factor and will help increase tape speed.

“Many times, it is the disk system which is unable to send data quickly enough to keep the tape drives streaming,” Sims says.

Easiest To Implement:

Avoid Tape-To-Tape Backups

Bruce Modell, a storage specialist at CDW (www.cdw.com), says an SME should avoid tape-to-tape backups unless the process is specifically mandated by the company for compliance reasons. This technique, which is essentially making an archive of an archive, is inefficient and ends up being costly because of the maintenance required and because it can lead to faulty backups. Adding new tape systems to handle the load is a better approach, according to Modell, because it means maintaining a single backup for the original data. This approach is easy to implement because it usually involves removing outdated equipment and adding additional tape capability to archive the original data in a way that leads to better data integrity.

but it will do none of them well; breadth often lacks depth.”

Employing a number of strategies can make email threat assessment more robust.

Upgrade Tools For Newer Threats

Assessing risk is best done with proper tools, and unfortunately, many SMEs in particular tend not to be well-protected against the current state of dynamic and continuously evolving threats that make up today’s Web 2.0, While says.

He thinks that many smaller organizations haven’t kept pace with the tools required to combat the threat types common today, such as intrusion prevention, data leaks, zombies, worms, and spam. Instead, they rely on older anti-malware technology that relies on static signature files, which are incapable of stopping the type of threats created daily.

“Think of this as trying to decide on which stock to trade based on reading yesterday’s financial report,” he says. “There are over 300,000 zombies activated daily for the purpose of malicious activity. Companies need anti-malware and security solutions that can provide real-time detection and elimination

of new and unknown viruses and worms, which make up roughly 25% of the threats today.”

Best Long-Term Strategy:

Schedule Quarterly Security Reviews

In order to do assessments accurately, SMEs should think about how they’ll handle them in the future, as well as today, says Mark Parker, senior product manager at Marshal8e6 (www.marshal8e6.com).

“Small businesses should schedule quarterly reviews of their security strategy,” he says. “This ensures that in the day-to-day IT operation, security doesn’t become an afterthought.”

Security reviews can be done in-house or by an outside consultant or service, but either way, they should be scheduled every quarter for consistency and to catch any gaps in threat assessment.

Best Company-Wide Policy:

Involve Users

Users are often the weak link in the security chain, says Fred Touchette, senior security analyst at AppRiver (www.appriver.com). He points out that even the most well-intentioned employee could unintentionally bring down the network by opening a virus-laden email or clicking a malicious link within an email.

Prudent security practices can minimize the risk from users, but also helpful is user

education that might involve asking users to forward suspicious emails to IT or not to click any links in email unless they’re from an internal source.

Touchette says, “[T]he most effective preventative strategy is to educate members within your organization to be prudent email users so that risky situations may be avoided as much as possible.”

20 Outlet 19" Wide Rack Mount Power Strip



MS2015 AC power distribution unit offers 15 amp, 120 volt capacity in a rack mount cabinet. Fixed mounting flanges offer a solid rack mount installation. Uses only 1 rack space (1U) when installed in any 19 inch rack Attractive all-steel housing with 10 rear-facing outlets and 10 front-facing outlets measures only 4.5 inches in depth. Unfiltered electrical pass-through and lighted switch with latching safety cover prevents risk of accidental turn-off. Ideal for distributing alternate waveform UPS or generator power in rack enclosures, network closets and more. Includes 15-ft. AC power cord, 15 amp circuit breaker. Lifetime warranty.

Sale Price!
\$59

24-Outlet 48" Rack Mount Power Strip Power Bar



FPI4824 power strip offers 15 amp, 120V multi-outlet AC power distribution in a convenient 48 inch mountable housing. Offers horizontal or vertical power distribution in rack mount, raceway and workbench applications. Includes 24 NEMA 5-15R output receptacles with 1.75 inch center-to-center spacing. Sturdy all-metal extruded aluminum housing stands up to demanding network, laboratory or factory environments. Includes 15-ft. AC power cord, 15 amp circuit breaker. Lifetime warranty.

Sale Price!
\$56

17-Outlet 19" Rack Mount with LCD Display 15amp



MS1917-LCD AC power distribution unit offers 15 amp, 120 volt capacity in a single rack mount cabinet. The built in power meter has eight (8) different displays showing Volt, Amps, Watt, VA, Frequency, Power Factor, Kilowatts, and KW per hour. Fixed mounting flanges offer a solid rack mount installation. Uses only 1 rack space (1U) when installed in any 19 inch rack Attractive all-steel housing with 10 rear-facing outlets and 7 front-facing outlets measures only 4.5 inches in depth. Unfiltered electrical pass-through and lighted switch with latching safety cover prevents risk of accidental turn-off. Ideal for distributing alternate waveform UPS or generator power in rack enclosures, network closets and more. Includes 15-ft. AC power cord, 15 amp circuit breaker. 3-year limited warranty. There is a lighted LCD Volt Meter to let technicians know exactly how much “power” is being drawn before they plug in additional equipment.

Sale Price!
\$149

PowerSwitch Network Management System Remote Outlet Control



Features

- Remote management and configuration of outlet via Web Browser or NMS
- Supports TCP/IP, UDP, DHCP, SNMP, HTTP protocol
- Built-in 10Mbps fast Ethernet interface for direct LAN connection
- Automatic events notification via SNMP Trap
- Flexible Event Action setting
- Schedule shutdown/startup of various connected devices remotely.
- Event logging to trace PowerSwitch operation history

- EMI/RFI filtering, built-in surge and spike suppression
- Auto-shutdown service to protect servers/workstations from data loss due to power failure.
- Quick installation and user friendly interface
- Security management provided.
- SNMP MIB provided

‘PowerSwitch’ is the ultimate power control center to manage multiple network devices via the Internet. After installing the hardware and setting up an IP address, this state-of-art technology allows network administrators an easy way to control AC power for various connected devices, such as servers, hubs, routers, modems, telephone systems and other equipment. Simply use a web browser to access the PowerSwitch.

Sale Price!
\$395

**A-Neutronics**.inc.

purchase directly at
www.a-neutronics.com
or call toll-free: **1-877-263-8876**

How To

Manage Privileged User Access

What You Need To Know To Detect Or Prevent Insider Attacks

by Carmen Carmack

SYSTEM ADMINISTRATORS and privileged users have the knowledge and access to commit malicious inside attacks. They can also inadvertently change systems and configurations in ways that compromise security. When data centers lack methods to prevent and detect these problems, insider attacks can cost enterprises millions of dollars, violate regulatory requirements, and potentially damage its reputation.

Manage Expectations & Behavior

To manage privileged users’ access to sensitive systems, data center managers need to adopt behavioral and technical methods. CERT’s insider threat model, known as MERIT (Management and Education of the Risk of Insider Threat), uses the cases the team investigates to convey methods for managing privileged users and insider threats.

“If you’re just looking for technical indicators of malicious activity, it may be too late to prevent that attack from happening or detect it early enough to minimize the impact,” says Randy Trzeciak, CERT senior technical staff member. The majority of IT sabotage crimes evolve around an insider working in a privileged capacity, with some level of expectations from the enterprise. When a precipitating event occurs, such as a transfer, demotion, or reorganization, expectations are no longer being met and the individual becomes disgruntled.

“What those individuals tend to do, at least in the cases that we’ve seen, is act out behaviorally first,” says Trzeciak. Behavioral precursors include conflicts with co-workers and supervisors, outbursts at work, arriving late, and performance problems. Trzeciak says that if an enterprise can monitor the behavior of its employees, then managers can realize the precursors and take corrective action.

When sharing bad news with employees, managers should take a holistic approach: Involve other departments and use effective strategies to communicate events to ease disgruntlement. After delivering the news, managers should monitor employees’ online activities regularly. In the event an employee is being terminated or is resigning, you need to watch that individual’s actions closely. “When we look at the crime of theft of intellectual property, in 70% of the cases we’ve seen, the theft occurred within three weeks of announcing resignation,” Trzeciak says.

Manage & Monitor Access

Privileged users are often in control of IT systems in data centers. To ensure these individuals act in the best interest of your enterprise, you need to trust them, but be sure to verify their activity. “Some of the ways we challenge organizations, from an IT perspective, include implementing segregation of duties in the IT department, enforcing a two-person rule for critical changes or rollouts, and protecting logs from alteration,” says Trzeciak. In numerous IT sabotage cases the technical staff has seen, Trzeciak says a disgruntled system administrator was responsible for tampering with the system.

“Identity and access management systems provide the ability for system managers to control access in as fine-grained a manner as they deem appropriate to the resources and systems being protected,” says Steve Olshansky, principal of LuminaGroup, a business technology consultancy based in Boulder, Colo. “IAM systems eliminate the need to share privileged user accounts among multiple staff and ensure that users are granted only the access required to perform their duties.”

Key Points

- Managing privileged user access starts with being aware of user behavior, communicating and meeting expectations of the organization and user, and working through events that may cause a user to become disgruntled.
- Behavior issues often precipitate IT system activity whereby a privileged user begins to prepare for an attack or acquire sensitive information.
- Enterprises can employ identity and access management tools; two-person approval for critical changes; privileged user account management tools; and other techniques to manage, monitor, and record activity.

Trzeciak agrees and says, “We don’t necessarily want to grant everybody admin privileges on everything. If we can define what the roles and responsibilities of your IT department are, [and] then restrict their access only to the systems and files and other objects that they need to do their job, that’s going to provide some level of security, as well.”

Strict password and account management for all users, including privileged users; elimination of shared accounts; and regular auditing of user accounts are also critical security procedures. Individuals planning attacks often look for unused, expired, or new accounts as a backdoor. “A centralized IAM system, tied to a centralized person registry, will prevent system or organizational silos from adversely affecting security practices due to delayed or lack of communication,” says Olshansky.

When an employee is dismissed, quickly deactivating all access is important. If an

TOP TIPS

- | | | |
|--|---|--|
| <ul style="list-style-type: none">• Monitor employees and respond to suspicious behavior, create an anonymous reporting system for employees to report such behavior, and watch for disgruntled employees. | <ul style="list-style-type: none">status and negative workplace issues, set expectations and keep them in line with policies, enforce policies consistently among employees, and clearly define roles and responsibilities. | <ul style="list-style-type: none">approval for critical changes. Eliminate shared accounts and monitor the network for suspicious activity. |
| <ul style="list-style-type: none">• Use a holistic approach among departments to manage changes in employment | <ul style="list-style-type: none">• Implement technical policies and tools, including segregation of duties and two-person | <ul style="list-style-type: none">• Protect critical information that privileged users don’t need by granting them access to only those systems and functions required for their jobs. |

How To

Decommission PCs

Old PCs Can’t Be Thrown Out, So What You Do With Them Makes A Big Difference

by Jean Thilmany

IF YOUR ENTERPRISE has recently upgraded the desktop or notebook computers employees use, you’re likely left figuring out what to do with the no-longer-needed systems.

Because systems contain lead and other dangerous metals and substances, throwing them out isn’t an option, as most state and local laws don’t allow computers to simply be thrown in the trash. These individual parts often must be recycled according to state and local standards.

That being said, there’s no single best way to decommission systems that are no longer used, says Andre Preoteasa, director of IT for Castle Brands. “Rather, there are

many ways,” he says. “I’ve given computers to employees for themselves or family members to squeeze a few more years out of the computers.”

Bill Horne, owner of William Warren Consulting, says enterprises should also consider donating the decommissioned machines to a local charity such as a VFW program, which passes the PCs to families of servicemen stationed overseas. “You’ll save the recycling fee, and your firm can probably write off some of the value,” Horne says.

Decommissioning

Regardless of whether you’re donating or disposing of the old systems, there are

some steps you need to take to properly decommission the systems.

Everyone has heard of cases where hard drives haven’t been properly reformatted before being sold. A study by Kessler International, for example, found that more than 40% of used hard drives for sale on eBay still contained personal, private, and sensitive information. The data included personal documents such as financial information, emails, and DNS server information, according to the study.

That’s why it’s important that all information be erased from the hard drive before computers are passed on, and a full-disk reformat is the easiest way to delete this information, Preoteasa adds.

“I’ve seen technicians take hammers to the hard drive to damage the disks, but that’s no guarantee they can’t be rebuilt,” he says. “I suggest spending the time to reformat the disk, which will wipe out all the information. It takes time, but it’s well worth it, and it’s a requirement for public companies.”

Use professional disk erasure software designed for the model of machine you’re retiring. Remember that disk designs frequently change, as do erasure methods and procedures, Horne says.

Proper Disposal

IT staffers at large enterprises with tens or hundreds of computers to decommission

Key Points

- Most laws call for PCs to be disposed of in an environmentally correct fashion.
- IT recyclers will properly dispose of and recycle components and parts, working with enterprises to fully destroy hard drives containing sensitive data.
- Monitors are currently among the hardest components to recycle because they contain lead.

won’t likely find the time to reformat every hard drive. And most enterprises—whether large or small—are loath to waste warehouse space on no-longer-needed PCs.

Enterprises with many computers to decommission should consider turning to an IT recycling company that will safely dispose of hard drives and will recycle parts, Preoteasa says.

The recycler will shred the hard drives and will properly dispose of your hard drive, monitor, and other components, says Barry Shevlin, CEO of Network Liquidators (www.networkliquidators.com), which refurbishes decommissioned PCs.

If you’re thinking about calling in an IT recycler but aren’t clear on how these companies operate, Matt Decareau offers some insight. He’s director of business development at M&K Recovery Group (www.mkrecoverygroup.com).

Companies specializing in IT recycling work with enterprises to fully destroy hard drives containing sensitive data. Usually the destruction can be monitored via Web

TOP TIPS

- | | | |
|---|--|---|
| <ul style="list-style-type: none">• Consider donating a PC that has a little life left; your enterprise may get a tax benefit. | <ul style="list-style-type: none">• Vet your IT recycler and consider overseeing the destruction process. | <ul style="list-style-type: none">metals contained within decommissioned equipment. |
| <ul style="list-style-type: none">• If you choose to erase hard drives, be sure you’re using software compatible with the drives. | <ul style="list-style-type: none">• An IT recycling company may be able to return money to your enterprise by selling the precious | <ul style="list-style-type: none">• Before decommissioning a PC, pull out specialized cards that can be reused. |

All rights reserved. © Upsite Technologies, Inc. 2009

HP Reports Earnings, Layoffs

HP plans to lay off about 6,400 more employees in the next year. The company made the announcement when it released its second-quarter financial results. The 2% workforce reduction is on top of the 24,600 jobs HP is cutting as part of its acquisition of Electronic Data Systems. The company reported a 3% year-over-year drop in revenue (up 3% when adjusted for currency fluctuations) but remained profitable with earnings of about \$1.7 billion for the quarter. Desktop PC revenues were down 24%, notebook revenues dropped 13%, and printer revenues dropped 23%. HP estimates a 4 to 5% year-over-year decline in revenue for the overall 2009 fiscal year.

Microsoft To Cut Some Employees In India

Microsoft says it will cut about 1% of its 5,500 employees in India as part of a second round of job cuts, which the company announced in January. A statement from Microsoft said the company was working with the about 55 employees affected to find other positions within the company or settle on “disengagement terms.” Microsoft says the layoffs are part of a “global realignment of our business priorities.” The company’s India locations focus primarily on service and research and development.

Microprocessor Shipments Down

First-quarter shipments of processors were down from the fourth quarter of last year but by a smaller amount than the previous quarter-to-quarter drop, according to research firm IDC, perhaps signaling signs of a small recovery. Shipments were down 10.9% between the fourth and first quarters but had dropped 17% between the third and fourth quarters of last year. Intel led with a market share of 77.3%, down 4.7% from the previous quarter; AMD gained 4.6% to take 22.3% market share. IDC’s latest report says the decline in shipments was “only slightly worse than typical seasonal decline.”

Conficker Still A Problem

The Conficker virus is still infiltrating systems at an alarming pace, infecting about 50,000 new computers per day, say security researchers at Symantec. Fortune 1000 companies in the United States, as well as computer users in Brazil and India, have been the hardest hit. The Conficker virus began infecting computers late last year through a flaw in the Microsoft Windows OS that would allow it to spread through networks and portable storage devices. Awareness and media coverage of the worm has dropped despite the continued threat from the virus.

Data Deduplication Faces Barriers To Implementation

Data deduplication technology claims to reduce storage needs by consolidating redundant data. In turn, this saves companies money on hardware expenses and related costs. Research firm Gartner has concluded that despite claims by deduplication product vendors of a reduction in storage by a ratio of 200:1 to 300:1, real-life estimates are closer to 20:1 to 30:1. Still, such numbers translate to large savings for companies. Gartner also found that despite the cost savings created by data deduplication products, only 30% of companies have deployed them because of high startup costs.



Bare-Bones Security

Take A Quick & Dirty, But Effective, Approach

by Bruce Gain

SLASHING COSTS remains first and foremost on the minds of IT admins, but it is hard to forget about security. As admins know all too well, cost savings don’t mean much when weighed against the collateral damage and legal liability a major security breach can cause. But in spite of security’s importance, reality dictates that spending often remains limited, and SME admins must make do with far less than what they think they should have.

In many cases, admins are often forced to determine the bare minimum they must do when it comes to determining the most important security items to evaluate. But what security measures are “just good enough?”

Devote Time & Money (Regardless)

The blame for security breaches will almost invariably fall on those in the IT department. This is the case regardless of whether you informed upper management about how lack of resources has prevented you from taking the proper measure to ward off attacks. So instead of focusing on covering your back, it is better to realize that security must be a priority that warrants immediate action and resources, even when taking a bare-minimum approach.

“There are no shortcuts to data center security. This is especially true in this age where a company may have to contend with multiple state, national, and international privacy laws,” says Joe Malec, the St. Louis chapter president of ISSA (Information Systems Security Association), who has reviewed SAS 70 and CICA 5970 audits and headed a number of security projects for Enterprise Rent-A-Car, where he was a security analyst for eight years. “Lawyers and regulators don’t usually respond well to the cost-cutting excuse when personal data is involved.”

In a nutshell, IT managers must realize that they have to somehow make time for security, regardless of their budgets.

“Since the lack of time and resources excuse will go over about as well as the cost-cutting one, companies need to ensure that a proper amount of time is provided for

the evaluation,” Malec says. “If the data center lacks appropriate security measures, it will have to be addressed at some point. It is better to be proactive and handle it on your own time rather than on someone else’s.”

Set Up An Audit

A good place to start as part of a bare-bones security plan is to appoint staffers to perform an internal audit of your needs and to assess risk over a six- to eight-week time period with weekly two-hour meetings, says Brad Kowal, an IT manager for Shands HealthCare in Florida. “But do a first-pass audit yourself,” Kowal says. “If there are glaring issues, fix them before engaging additional internal auditing or risk-management groups.”

Once you’ve conducted an audit, prioritize security needs in order of importance and then take action by beginning at the top of the list. Protecting and monitoring the servers on which highly sensitive data, such as employees’ Social Security numbers and birth dates are stored, for example, obviously takes precedence over equipment that stores less critical data.

“Work out what is the most pressing issue, whether in terms of risk, regulatory compliance, or actual damage being caused, and address that first,” says Jamie Riden, a member of UK Honeynet Project (www.honeynet.org) and an independent security researcher. “Then move on to the next, and so on.”

Spend some time thinking like a black-hat hacker by seeking security holes like an intruder would. Then, determine where

Once you’ve conducted an audit, prioritize security needs in order of importance and then take action by beginning at the top of the list.

your network weaknesses are and how you would be alerted if someone sought to externally exploit the network.

David Falloon, an independent security consultant, says, “Ask yourself this question: ‘If someone had breached my system, how would I know?’ That is the foremost question that should occupy your thoughts on security.

“Enumerating your attack surface is a good start. You want to identify all entry points into each of your servers: what ports

are open, what services are running, what user accounts are available, what are you logging, and what traffic is normal,” he says.

It is also crucial to track down all potential exposed ports, which can be tricky when you have equipment that might be

Of Special Interest To:
Health
Education
Government
Data Centers

Key Points

- Understand that taking the bare-minimum approach when evaluating security will still involve a substantial investment in manpower, which must be made regardless of resources.
- Make sure any exposed piece of equipment is updated and evaluated but begin by protecting the most sensitive and critical data first.
- Install and learn how to use intrusion prevention and detection systems so that when there is a problem, you will be more likely to know about it.

spread around a campus. “You’d be surprised how many times old forgotten gear can be sitting unpatched and wide open on the Internet,” Falloon says. “Run the same scan on your internal subnets. This is what an attacker will do to breach your systems, so beat them to it.”

Monitor Or Else

Intrusion prevention and detection systems are software packages that you cannot do without, experts agree. Although they do require some skill to maintain and operate,

Government, Education & Healthcare Sectors Take Note

If you work in the government, education, or healthcare sectors, there are special issues you must take into account. Records with personal information in these sectors, for example, have especially stringent data privacy laws associated with them that mandate how data is shared and stored. But regardless, a minimal approach to security remains similar to what is required in the private sector.

Pritchard Moncriffe, CIO at Langston University, for example, recently completed an

upgrade to the university’s networking infrastructure for more than 4,000 students and 247 staffers and said that, just as in the corporate world, dedication to the area of interest and commitment to completing the projects are essential to maintaining basic security needs on a university campus. “[Our priorities] are Web security, stability of the network, and disaster recovery, with business continuity implemented,” Moncriffe says.

Data centers in the government, education, or healthcare sectors

often must adhere to specific security compliance regulations, so, at a minimum, at least one auditing firm should be used that can offer special guidance. In health care, for example, external auditing agencies include JCAHO, ACHA, and CMS, says Brad Kowal, an IT manager for Shands HealthCare in Florida. “As deficiencies are identified in your data center, an auditing firm can give you the direct data and backing you sometimes need to acquire the expense or capital funds necessary to implement the changes required,” he says.

IDS/IPS is required to keep you updated about whether there are problems on your network, Riden says. “If you haven’t got visibility of your network with IDS/IPS, it becomes difficult to work out the severity of problems,” Riden says. “Otherwise, you’re acting from incomplete information.”

If you haven’t already done so, now is a good time to check to make sure that patches and antivirus software updates have been installed and uploaded. After you have checked that all your PC and server operating systems and applications are up-to-date, check that antivirus software is installed on all Windows and Unix servers, Riden says.

“Antivirus software can be installed on Unix file servers, but it is generally used to stop Windows viruses from residing on file servers,” Riden says. “Then remove as many unneeded services as possible from each host. SSH, for example, is often subject to password-guessing attacks, and this is the most common method of compromising Unix boxes that I’ve seen to date.”

Consult Resources

There are many resources that can allow IT managers to gather information about security needs without having to rely on expensive third-party consultants. A good place to start includes the PCI DSS (Payment Card Industry Data Security Standard) requirements and ISO 27001 standards, says Malec. “Both of them detail the physical and logical safeguards that need to be in place for protecting data,” he says. [E]

Vetting The Release Candidate

Get The Most Out Of Windows 7 RC

by Christian Perry

FOR IT MANAGERS, nothing quite beats the excitement of kicking the tires on a new Windows release candidate. But amid the feature discovery and dreams of markedly improving an IT environment, the task of evaluating the RC for any operating system entails plenty of work and analysis. The Windows 7 RC is now available, and managers face the critical challenge of using this prerelease version to predict whether the final release will be a proper fit for their environments.

“The biggest challenge is not knowing what’s going to make it into the final version,” explains Jay Hunter, a senior network engineer with the NEA (National Education Association). “Testing a new feature that is removed or altered can drastically change how you utilize the OS in your environment.”

Although organizations can’t make concrete predictions on what elements of the Windows 7 RC will survive through to the final release, they can still work to understand the major differences between the upcoming OS and prior versions. Perhaps more importantly, proper testing can also pinpoint potential roadblocks and supply a basic understanding of how Windows 7 will mesh—or not mesh—with an organization’s IT environment.

Business Case First

According to Peter Wheary, director of client services at Sindel Technology Solutions (www.sindel.com), it is best to begin with the end in mind by understanding what you intend to learn from testing the Windows 7 RC. Before any hands-on evaluation and testing commences, Wheary recommends stepping back and thinking about business needs, the budget, and where the organization currently feels pain.

“Establishing the business case early is critical,” says Ryan McCune, solutions director at Avanade (www.avanade.com). “One of the biggest mistakes an organization can make is to execute a successful evaluation without having the business justification complete. Continuity between the testing and deployment phases is very important, and a solid business case helps ensure that the momentum is maintained. It’s very hard to recapture that momentum at a later point in time, and many companies who stumble with the business case find themselves having to start over.”

But once the business case is firm, managers can begin to get their hands dirty. The

overwhelming question that needs to be answered in the evaluation process is whether an organization’s applications and hardware will work with the new OS, and arriving at this determination is no easy feat. Although the temptation might exist for an IT team to throw the RC at every available program and device, a more sensible approach can lead to better results.

“Some enterprises will be tempted to jump in and begin testing each and every application for compatibility. That is the wrong approach, as it increases the testing time and reduces the cost savings that could be achieved through standardization. The first and most important step is to justify which applications are required from a business standpoint. Only those applications which can be justified should be tested and packaged for deployment on the new platform,” McCune advises.

Digging In

Although compatibility typically improves between the RC and the final release of an OS, testing the RC’s compatibility can nonetheless deliver a relatively accurate picture of the road ahead. Hunter notes that the lack of compatibility was the primary shortcoming of Windows Vista and the reason the NEA held off on deploying that OS, in turn avoiding serious problems had a Vista deployment occurred. Digging deeply into an RC can help organizations make similarly wise decisions—and they might even discover Windows 7 will offer drastic improvements over their current deployment.

“Without a pilot program involving employees, you will miss vital feedback that will assist your organization in deploying a new OS effectively. . . . You want your employees involved.”

- NEA’s Jay Hunter

To get started with evaluation, Hunter recommends gathering the following elements: computers for testing, including the oldest computers in the environment; all of the support staff that would be supporting Windows 7; test machines and images loaded with the organization’s production applications; a domain to test distribution of group policy; and finally, a group of staff members who can be used as early adopters.

From there, Hunter says that testers should verify that device drivers are available for all the hardware being evaluated, including old computers. Next, IT staff needs to spend time with the RC, including

never know for certain that it will behave the same in all instances as the release candidate.”

According to Avanade’s Ryan McCune, it’s nonetheless crucial to “practice as you play,” noting that the RC should be evaluated using the same deployment and management approach that will be used post-migration. This optimized deployment and management approach will work to both reduce the cost of the migration to Windows 7 and reduce the cost of managing PCs post-migration, he says.

installing the OS, running disaster scenarios in which they need to recover a machine, and verification that new Windows features work reliably and as expected. For application testing, IT staff should confirm that the test machines can support an in-place upgrade and that older software is supported. Further, testers should ensure that a clean installation of Windows 7 will let them install legacy applications (especially 16-bit).

Key Points

- Moving forward with Windows testing before establishing a business plan is a dicey prospect, so ensure that you understand how the new operating system would fit in your environment.
- Both application and hardware compatibility testing are critical to the release candidate’s overall evaluation.
- No RC evaluation is complete without a pilot program, which provides a picture of the operating system’s real-world usage.

Wheary notes that testing for hardware compatibility is particularly important if an organization plans to upgrade from WinXP and/or Vista machines, though he says that machines that are built to run Vista will not have issues running Windows 7. Wheary also recommends testing user profile compatibility, group policy compatibility, and any custom login scripts. Further, he says it’s smart to test Windows 7’s multitouch

screen navigation feature if the organization plans on using the OS with any touch-sensitive screens. Hunter suggests also looking closely at other components, such as BitLocker and PowerShell 2.0, while McCune says it’s wise to test the new DirectAccess capability.

Prep By Pilot

Aside from compatibility testing, pilot programs for release candidates generally provide the most accurate depiction of an operating system’s eventual success (or failure) in an environment. These programs can vary widely depending on the size and scope of the overall user environment, but basic guidelines apply to most pilot programs. For a comprehensive look at what Micro-soft recommends for developing and executing pilot programs, visit the Windows Vista Library at Microsoft TechNet (tech.net.microsoft.com).

“An organization needs to understand how its users work in order to deploy the most efficient environment in which they can work,” Hunter says. “Without a pilot program involving employees, you will miss vital feedback that will assist your organization in deploying a new OS effectively. With rare exception do you want to skip this step, and I can’t think of the exception. You want your users involved.”

FTC Drops Rambus Antitrust Case

The Federal Trade Commission has dropped its antitrust case against Rambus after the U.S. Supreme Court rejected the FTC’s request to continue the case. In 2002, the FTC accused Rambus of improperly hiding plans to patent DRAM-related technology while it was a member of a standards-setting group in the mid-1990s. The commission said Rambus advocated the technology as a new standard and later demanded payments from the chips’ makers. A federal appeals court ruled that the FTC did not prove that Rambus had an unlawful monopoly, and the Supreme Court denied the FTC’s appeal of that decision in February.

Report Contends Google Is Using Chrome For Ad Profit

According to Benjamin Edelman, an assistant professor at Harvard Business School, Google and its partners are making money from paid traffic that advertisers would have gotten for free. Edelman’s report says that Google’s Chrome browser is engineered to search for keywords and Web sites, rather than navigate directly to Web sites. When users begin typing a URL, Chrome’s auto-complete feature turns it into a keyword for a search. Other browsers, however, are known to have similar features. Edelman says that Chrome is pushier with its auto-complete than others.



France Passes Antipiracy Law

The French National Assembly passed a bill that, after two warnings, will punish digital pirates for their illegal activities. The law will suspend offenders from Internet access for up to a year and place them on a “three-strikes” blacklist that disables them from receiving Internet access from any other ISP. The French National Assembly had previously rejected the bill. The current decision has caused controversy in France and around the world, with many consumer and free speech advocates arguing that the bill denies accused pirates the right to challenge their charges and could pave the way for the violation of personal privacy rights.

EU: Hold Software Makers Responsible

At least two European Union commissioners believe software manufacturers need to be held more accountable for the security of their products. The EU currently has protections in place for other consumer products, and commissioners are now looking to extend those protections to cover licensing agreements found in software products for virus protection or any other licensed content. Commissioner Meglena Kuneva says the move will give consumers “confidence that their rights are guaranteed.” She adds that the “Internet has everything to offer consumers, but we need to build trust so that people can shop around with peace of mind.” Several groups have opposed the changes, arguing that software makers can’t be held liable because it’s virtually impossible to guarantee how consumers will use a software product, including whether they’ll update it as recommended.

Release Candidate Testing: Never Assume

Everything fell perfectly into place. You tested the heck out of the release candidate, involved numerous users, and all but guaranteed that the new operating system would be a perfect fit for your environment. But then reality emerged when the final release came.

“You are not testing the final version,” says Sindel Technology Solutions’ Peter Wheary. “You may have crossed all your t’s and dotted all the i’s throughout your pilot program, but until you actually have the final version, you



Digital
Brothers
Group

DEC-Compaq-Cisco-Sun-SGI

AlphaServer GS160 Model 16

Base System for OpenVMS

- DY-160CG-AA
- One Alpha 21264 Processor 1224 MHz
- Four Quad Building Blocks
- One 14-Slot PCI Shelf
- OpenVMS Operating System License

ALSO AVAILABLE:

- Additional 1224 MHz CPU w/SMP
- Additional Memory
- Additional PCI Shelves
- Additional PCI Options

Call or E-Mail
For Pricing

2 SYSTEMS IN STOCK!

Authorized **COMPAQ**® Reseller

WE WILL BUY YOUR USED HARDWARE!

770-931-7732

Fax 770-931-9416

www.dbgweb.com | salesp@dbgweb.com



Don't throw out your PC flat panels
when you think they're dead...

SAVE MONEY and let Pegasus repair your PC flat panels!

IBM, Dell, and most all other manufacturers
14", 15" & 17" Flat Panels
POS Flat Panels

Whether it is a Backlight, Inverter, Transistor, Video Processor, Flash IC,
etc., we can repair your flat screen with a **90-Day Warranty** on all repairs.
Pricing ranges from \$50 to \$95 depending upon the size and the problem.
Pegasus has **Free Ground Return Shipping** and a **No Fix/No Fee** policy.

Pegasus Computer Marketing, Inc.
(800) 856-2111
www.pegasuscomputer.net



SECURE END OF LIFE DATA SOLUTIONS

We Buy Excess & Used Data Tapes!

✓ ALL TYPES

✓ ALL BRANDS

✓ ALL VERSIONS



Enterprise / Mid-Range / Entry Level / Personal Media

Brands: HP, IBM, FUJI, SONY, MAXELL,
IMATION, QUANTUM and many others

Most Wanted: SUPER DLTII / LTO2,3,4 / AIT1,2,3,4 / AME2
9940 / 3590J / 3590E / MLR,SLR / TR5,7 / VXA / V23

SECURE DATA DESTRUCTION!

SHRED THE DATA,
NOT THE CARTRIDGE!

Our data eradication processes meet and/or exceed all laws, acts
and compliance standards such as HIPPA, Sarbanes-Oxley, D.O.D.,
Gramm-Leach Bliley along with all other concerns pertaining to secure data eradication.



SECURE END OF LIFE
DATA SOLUTIONS



We Pay freight
from anywhere in the WORLD!

949-757-0100
buyback@recycleyourmedia.com

www.RecycleYourMedia.com

Dell PowerEdge Server
Dell Server Parts & Accessories
Dell Racks and Storage
Dell PowerVault

Need an affordable cluster solution?
Go pre-owned, and save!



STALLARD
TECHNOLOGIES, INC

Featured Special
Dell PowerEdge 1950 Cluster
Pre-Owned Dell 42U Racks w/ 34 Servers

Dell 4210 Rack & QTY 34 PE 1950's, each featuring:
CPU: 2 x Dual-Core 3.0GHz 5050 / 2 x 2MB Cache
667MHz Front Side Bus
RAM: 4GB PC-4200 Memory
HDD: 1 x 73GB 15K SAS Hard Drive

Professionally cabled, and fully loaded racks
All systems thoroughly tested w/ BIOS updated.
Just plug it in, fire it up, and it's ready to go!

\$29,999
call for freight quotes

Upgrades and further
customization available!

Don't need the rack? Server-only
5-Packs available!



\$4,399
plus shipping

Single Units
\$999
plus shipping

In today's economy,
why buy new?

Call Toll Free
1-877-851-2260

Browse our
entire inventory at
WWW.STIKC.COM



Have equipment to sell? Contact purchasing@stikc.com

Help Your Help Desk

Tips For Improving Help Desk Efficiency

by Robyn Weisman

• • •

YOUR IT STAFF has been cut in half. You're in the process of upgrading your server configuration to leverage virtualization and data encryption. You're comparing proposals from different email management service vendors. And, in the middle of all this action, you get a phone call from someone in payroll who is in a panic because he's unable to enter his password and can't access his accounting software. You spend five minutes calming the guy down and another five minutes diagnosing his machine remotely.

Granted, the aforementioned scenario is extreme, but your help desk should be able to help you as much as it purports to help your employees. Ideally, your payroll employee could have found information about his password problem in an easy-to-reference knowledge base and accessed a process that would have walked him through the steps to automatically reset his password.

So, what can you do to improve your help desk efficiencies, particularly in this economic climate? Here are a few tips to get you started.

Check Your Current Help Desk Solution

Time- and cost-cutting tools may already be a part of your current help desk solution, says Michele McFadden, director of product management at Numara Software (www.numarasoftware.com). "You might have a service desk tool that offers an automatic password reset option that's integrated with Active Directory or a self-service portal where users can search a knowledge base and see if there's anything published out there that resembles their problem," she says.

According to McFadden, companies often have eschewed such applications because they think users won't know how to use them, and IT doesn't have time to train them. "But when you're doing double the work, you really want to spend that little bit of time to put something in place there, so that next time a customer calls, you walk them through that self-service, walk them through that password reset so that they can do it again the next time," she says.

Set Up Knowledge Base Processes

If you haven't already, implement a user knowledge base, says Nick Cavalancia, vice president of Windows management at ScriptLogic (www.scriptlogic.com). "HDI says there is a 15% reduction in support

calls when users can solve issues themselves," Cavalancia says.

McFadden says that putting together a knowledge base doesn't necessarily mean you have to hire a full-time knowledge architect to build it. "It's just when you solve a problem, and you say, 'Hey, wait a second. We've run into that before,' it

Key Points

- Leverage available helpers within your help desk solution.
- Knowledge bases can limit those bothersome 10- to 15-minute help desk calls that can hamstring your IT staff.
- A coherent escalation process enables your staff to handle level 2 and higher concerns in a consistent, reasonable fashion.
- By logging all help desk calls, you will see patterns that can tell you the sorts of problems your employees are having and how to prioritize them.

should be easy just to publish that and make it available to the users," he says.

Have An Escalation Process In Place

Jeff Connally, president and CEO of managed help desk solutions provider CMIT Solutions (www.cmitsolutions.com), says that getting a help desk solution that integrates into your ticket systems means that your help desk can solve a high percentage of user questions, but when a level 2 answer is needed, the IT staff can get right on it.

"It's those 10- to 15-minute questions that knock an in-house staff off track and dilute their effectiveness. A ticketing system [can] really give the power to your help desk," Connally says.

Log Every Help Desk Call

Make sure you log each one of your help desk calls in both a descriptive fashion to provide you with the nature of the problem and a coded one so that you know what product or process is causing the difficulty, says Connally. "This gives you a way to prioritize what the critical issues are so you can determine the root cause of the reason the person called," he says.

Too often, in-house IT staffs run from fire to fire because no one has put together a big-picture overview about why problems are occurring. "For example, if people are having trouble with PowerPoint, maybe it's worth holding a series of classes for the departments that are trying to use it but aren't well-trained. That might be a much lower-cost solution instead of reactively handling 100 questions a month," Connally says. **P**

Can Companies Save Money Buying New Laptops?

Companies may be tempted to hold onto employee laptops beyond the traditional three-year warranty period to save on capital expenditures while the current recession stretches on, but such an approach could actually cost companies more in the long run, according to a recent study from J.Gold Associates. In its "Keeping Notebooks Past Their Prime: A Study of Failures and Costs" report, J.Gold Associates reports that keeping laptops two years beyond a three-year warranty replacement cycle could cost companies \$1,050 on average per notebook when repairs and other costs are factored in—a price higher than if purchasing a new notebook.

"We discovered that the added costs of keeping a machine for five years instead of three years actually exceeded the cost of purchasing a new notebook after year three," says Jack Gold, J.Gold Associates' president and principal analyst, in the report. The study adds that using outdated equipment could cost companies \$9,600 per employee in lost productivity. Repairing a failed notebook that's under warranty, meanwhile, costs a company \$970 vs. \$1,425 if out of warranty. The study additionally cites a "Failure Tax" (or repair calls) totaling about \$130 per notebook during the laptop's first year but increasing dramatically each subsequent year.

A Better Alternative?

Since the study's release, Gold has stated that some companies are replacing laptops with more cost-effective smartphones and other mobile devices for those employees who use their laptops primarily to access email, a trend Gold expects to grow significantly in the next 10 years. Jim McGregor, In-Stat chief technology strategist, says it's difficult to discern the exact percentage of employees who only use a laptop for email purposes, but he sees handhelds augmenting laptop use rather than fully replacing them productivity-wise.

Although McGregor believes netbooks show significant potential, in enterprise environments, "it becomes a matter of how is it sold through OEMs." For example, saddling employees with less memory and processing power for certain tasks could handicap productivity, he says. Although McGregor sees the lines between notebooks and netbooks continuing to blur moving forward, considering the quality and alluring prices of current light and thin notebooks, ultra-thin notebooks may be a better overall option now than netbooks.

by Blaine Flamig

It's The Little Things

Some of the most time-consuming help desk issues are completely avoidable with some common sense. Give employees a list of ways to avoid or minimize trouble and conserve your help desk resources for more complex issues.

These suggestions come from Michele McFadden, director of product management at Numara Software (www.numarasoftware.com). McFadden suggests emailing a list of these and other simple tips to employees, as well as posting these suggestions at desks, common areas, and on your company's internal Web site.

- When in doubt, reboot before you contact your help desk. "Whether it's rebooting because your computer is frozen, and you're afraid to touch anything, reboot or just do your reboot on a semi-regular basis," says McFadden. "Some people go six months or longer without rebooting, and we all know there are processes out there that wind up taking up a lot of memory."
- Before contacting your help desk, whether via phone, email, or online form, make sure you know the basics of your PC, laptop, or

other device. For instance, know the OS your machine uses, the version of the OS, and the name of your machine.

- Avoid third-party toolbars and other widgets that can slow down your machine. Although many of them are quite functional, they can have a negative performance impact on your machine because so many of them are constantly trying to index themselves and connect to the Internet.
- Choose a password for your machine and your applications that you can remember but is not memorable. For example, choose some combination of letters, characters, and numbers that doesn't include, say, your birthday, anniversary, or other public information.
- If you're unable to successfully enter a password, double-check that you didn't leave the CAPS LOCK key on by mistake.
- Finally, memorize your password. You should know by now that leaving a Post-it reminder in your desk—or worse, on your monitor—is not a good idea.

WE BUY TAPE!

DLT-LTO-AIT-AME-DDS-QIC-3480-3590-9840-Etc.

New & Used - All Types of Data Tape Media
Certified DATA DESTRUCTION Assured

World's #1 Tape Buyer is The Data Media Source
Highest values paid - Free pick-up at your site



DATA MEDIA SOURCE

1-800-252-9268 | www.datamediasource.com

Magnext Ltd

7099 Huntley Rd, Suite 104
Columbus, OH 43229

Toll-free: 888-NOW-TAPE

614-433-0011

www.magnext.com



MAGNEXT serves the needs of businesses, large & small, throughout the USA and internationally with: New & refurbished tape libraries; Hard-disk based backup solutions; Library upgrade packages for higher performance & capacity; Professional repair services—stock 1000's of parts

SUN-STK LIBRARY SPECIALS

SPECIAL PRICE

- | | |
|---|-----------|
| • SUN-STK L20 Tape Library, 1xLTO3 LVD SCSI Drives (New drive, refurbished chassis, with warranty) _____ | \$7,500 |
| • SUN L25 Tape Library, 2xSDLT320 Drives (New chassis, refurbished drives, with warranty) _____ | \$8,100 |
| • SUN L25 Tape Library, 2xSDLT600 Drives (New chassis, refurbished drives, with warranty) _____ | \$12,300 |
| • SUN-STK L80 Tape Library, 2xLTO3 LVD SCSI Drives (New chassis and drives, with warranty) _____ | \$12,500 |
| • SUN-STK SL8500 Enterprise Tape Library, 6xLTO4 4G FC Drives (New drives, Refurbished chassis, with warranty) _____ | \$118,000 |
| • SUN L180/L700 Library Upgrade: NEW LTO4 4G FC Drive module, includes library controller card with NEW 3.18.02 firmware (in exchange) to support LTO4, with warranty _____ | \$9,900 |
| • SUN-STK SL500 Library Upgrade: NEW LTO4 4G FC (LTO4-HP4FC-SL500Z) (NEW w/warranty) _____ | \$8,700 |
| • MEDIA HP (C7973A) LTO3 Ultrium RW Data Cartridge, 400/800 GB (Brand-New/sealed) _____ | \$31.10 |
| • MEDIA HP (C7974A) LTO4 Ultrium RW Data Cartridge, 800 GB/1.6 TB (Brand-New/sealed) _____ | \$51.00 |

Committed to providing high-value, high-quality, products to the IT marketplace

News

McAfee To Buy Solidcore

McAfee plans to pay \$33 million to buy Solidcore and will pay an additional \$14 million if the company meets specific performance targets.



McAfee plans to use the purchase of Solidcore, which sells whitelisting technology that helps prevent malware, to increase the number of security products it offers for a variety of devices such as ATMs and cash registers. Solidcore's technology is currently being used in about 100 financial institutions and in more than 15,000 retail stores. Solidcore will be integrated into McAfee's Risk and Compliance business unit. The acquisition will be completed in the second quarter.

Facts Surface On Google Outage

When Google experienced a disruption in service in May, some business sites took twice as long to load and were twice as likely to fail, according to Web application provider Gomez, and online retailer transaction time quadrupled. Google says that 14% of its users were in some way inconvenienced. Commenting on the affair, Craig Labovitz of Arbor Networks says that failures happen, "but if you happen to be Google . . . people notice." The outage was caused by a routing error that meant a portion of the search company's Web traffic was routed to Asia.

HP Recalls 70,000 Laptop Batteries

In conjunction with the U.S. Consumer Product Safety Commission, HP announced the recall of 70,000 Li-Ion batteries in HP and Compaq notebooks because of "two reports of batteries that overheated and ruptured, resulting in flames/fire that caused minor property damage." Sold between August 2007 and March 2008, the notebooks include numerous Pavilion and Presario models, as well as HP Compaq models. A list of notebooks affected is available at the HP Notebook PC Battery Pack Replacement Program Web site (bpr.hpordercenter.com/hbpr) and the CPSC's site (www.cpsc.gov/cpscpub/prerel/prhtml09/09221.html). "We are taking this action as part of our commitment to provide the highest quality of service to our notebook customers. We are proactively notifying you of this issue and are prepared to replace all verified affected battery packs," HP says. Those affected are asked to immediately remove the battery from their notebooks and contact HP to verify if the battery is included in the recall. If so, HP will provide a free replacement battery.

Optimizing The Sleep Cycle

How Researchers Are Tackling The Power-Hungry Habits Of Idle Servers

by Christian Perry

SERVERS ARE A RESTLESS bunch by design. Like insomniacs with a nagging Red Bull habit, they rarely sleep through idle periods, instead waking every few hundred milliseconds to see if there's a job waiting for them—regardless if there wasn't a job waiting last time and if there isn't a job available this time. This constant sleep/wake cycle in turn wastes tremendous amounts of energy in data centers and has spurred researchers to seek more efficient methods for saving power during idle server time.

"In the typical data center, only about a fifth of servers are actually actively doing something at any particular time," explains Thomas Wenisch, an assistant professor in the University of Michigan's Department of Electrical Engineering and Computer Science. "The problem with the servers that are built today is that when they're idle, they still consume about 60% of the power that they consume at peak, when they're completely loaded, doing useful work. So the vast majority of the energy in these data centers is being left on the table. We're just wasting that energy."

Because servers must be ready to throw their full horsepower at tasks at any given time, finding a sleep solution that doesn't negatively impact overall data center performance is a highly challenging task. However, Wenisch and other researchers are making major headway in the quest to conserve server power.

All Together Now

Wenisch, along with students David Meisner and Brian Gold, recently unveiled research that investigated a method for putting idle servers to sleep. Based on extensive analysis of 600 servers, the research found that the average server idle period is hundreds of milliseconds, while the average server busy period is just tens of milliseconds. When transitioning between these sleep and work states, servers typically move from a relatively deep slumber to full steam and back again, even if there's no job available or the job doesn't require full power.

To address this problem, Wenisch and his team have devised a software/hardware tandem, called PowerNap and RAILS (Redundant Array for Inexpensive Load Sharing), that detects these brief periods

where the server has nothing to do and shuts down as much of the system as possible. Although data centers generally opt for components that offer peak performance, there remain components that provide low-power modes, such as the self-refresh mode in DRAM, energy-saving modes in CPUs, and others. PowerNap works to provide coordination between these components at the operating system level to enable a rapid-state transition the moment PowerNap detects the system is idle.

"Based on our survey of the individual device technologies, if you were to select components for a server based on their energy-saving features, you should be able to transition into a sleep mode on millisecond time scales and go from hundreds of watts for a blade server to on the order of 10 or so watts for all of these components in their lowest sleep state," Wenisch says.

Struggling With Supply

But there are other challenges to overcome outside of device coordination. According to Wenisch, the slowest component—and the one in which existing sleep states just don't measure up—is the server's power supply. Today's high-end blade systems employ a small number of high-powered, enterprise-class power supplies that can deliver kilowatts of power. Because each of the blades in a rack draws a couple of hundred watts when they're idle, those power supplies operate at their highest capacities, regardless of what the servers are doing.

"The thing is, when you reduce the current draw on a power supply—when you operate it well away from its peak capacity—the energy efficiency of converting AC to DC power drops off precipitously," Wenisch explains.

This is where Wenisch's RAILS approach comes in. It's no accident that the RAILS acronym looks suspiciously similar to RAID, a concept in which many inexpensive disks are used in place of a fewer number of more expensive disks. With RAILS, a data center would deploy multiple, smaller (think 500W) power supplies in place of one 2,250W power supply.

"The key idea is to cut power supplies in and out as servers wake up and go to sleep so that at any particular time, the number of power supplies that are powering your solution are active and awake," Wenisch says.

The fundamental research for the PowerNap and RAILS solution is complete, and Wenisch and his team predict they're about a year away from building and engineering a prototype along with industry partners.

Looking Outside The Box

Ask Pete Beckman, director of the Leadership Computing Facility at Argonne National Laboratory (www.anl.gov), about power in data centers, and he'll point to how this nation's early settlers viewed water as a limitless resource. But as we now know that water in the United States is not limitless, we also understand that data centers can no longer assume that there is an endless supply of electrical power. Beckman oversees the Intrepid, a 557-teraflop supercomputer that

Key Points

- Due to inefficient design, servers constantly transition from a sleep period to a full-bore computing state, in turn consuming exorbitant amounts of power.
- Many server components do indeed feature low-power states, but they don't often exist in the same hardware configuration. If they do, software hasn't been available—until now—that can coordinate those states.
- Although sleep modes save power, they can also lead to inefficient use of other server-related architecture, so researchers are examining methods for handling computation tasks in nontraditional ways such as moving them to other parts of the planet where electrical rates are lower.

churns through scientific calculations around the clock.

"We have been optimizing the energy consumption. [The Intrepid's] architecture is already about twice as energy-efficient as other supercomputer designs, but there is still a lot more optimizing that can be done." Although the power consumed by servers can be conserved by not turning them on or putting them into low-power mode, Beckman says that these techniques lead to inefficient use of other infrastructure such as transformers and chillers.

"Electricity should never be wasted, so if there is no work to do, servers should automatically spin down to the lowest sleep state possible. However, the best solution is to improve our techniques at predicting and then managing server load," Beckman says. "For jobs that are latency- and bandwidth-tolerant, we can even imagine moving the computation to the other side of the planet, where nighttime electrical rates might be lower. The cloud computing revolution is just beginning, and as we commoditize computation with virtual machines, we also make it possible to be more fluid and mobile and open other opportunities for cost and energy savings." ■

WANT TO BUY

- HP • COMPAQ • DEC
- OFF-LEASE
- SURPLUS/EXCESS
- END OF LIFE

(800) 426.5499 TOLL FREE

(508) 230.3700 LOCAL

(508) 238.8250 FAX

info@compurex.com

www.compurex.com

COMPUREX SYSTEMS CORPORATION

Serving the IT Industry for 20 Years

BUY • SELL • LEASE • RENT • REPAIR

FREE SHIPPING!

We Buy Used Cell Phones
& pay up to **\$50** for each phone!

Some phones have no value. See current purchase price list for individual model prices at www.pacebutler.com

www.pacebutler.com
1-800-248-5360 • (405) 755-3131

ITT Information Technology Trading

- We Buy, Sell and Lease IBM
- AS/400 • RS/6000 • Servers
- System Upgrades
- Advanced 36 Systems
- Tape Subsystems
- Printers, Terminals, Modems
- 21 Years Experience

Ph: (877) 715-3686

Fx: (405) 715-3682

www.itechtrading.com

IBM

We Also Buy All Other Brands of Computer Hardware!

Miss an issue?

Don't have a print copy handy?

Go to Processor.com and download the entire issue as a free PDF.

PROCESSOR

User Access Control In Education Environments

Give Students The Access They Need Without Sacrificing Security

by John Brandon

IT’S A NOTORIOUS PROBLEM in the education market, one that has caused concern among administration staff and IT administrators alike. With students of all ages requiring access to computer resources, there’s a fine line between providing enough access to learn and too much access—such that a student could actually hack into a network and cause damage. For many educational institutions, the problem is exacerbated by concerns over viruses, malware, and other kinds of infections.

“The security threat does increase as access to resources increases, but the threat is not because of the access but because of nonsecure passwords or password management systems,” says Mike Donoho, the technology systems manager at Fergus Falls Public Schools in Fergus Falls, Minn. “We restrict users to try and make it easier for them to do what they need to do, not because of security reasons. It is easier for the non-technical user to find what they want without having to weed through a bunch of resources that don’t apply to them. So I would place that threat as moderate.”

Grant Appropriate Access Levels

According to Donoho, the main issue with user access control is providing access to the right level of services, rather than just having a carte blanche approach where every student gets the same kind of access. He says students get confused when they have too much access and yet can’t do what they are required to do for their school projects and homework if they do not have enough access.

Other key issues for the school district have to do with storage (which it limits on a per-student basis) and outside access to the Internet (which it also limits due to bandwidth issues).

“If students have too much access, they waste time searching servers for the project they are looking for or decide to print to [a] printer in a building across town,” he says. “In theory, each user should be able to control authentication. In reality, we have found that students will use the excuse that they can’t remember their password or ‘someone changed it’ to get out of doing their class work. Because of this, we do not allow students to control their own authentication.”

Other Approaches To UAC

Of course, Windows Vista has a now-infamous feature for user access control that prompts users when they are about to install an untested program. In Windows 7, Microsoft will introduce sliders that can be customized (and locked by IT staff) so that the prompts do not appear as often.

Scott McCarley, a spokesperson for security company BeyondTrust (www.beyondtrust.com), suggests that schools should lock down the UAC controls in Windows so the end user cannot access administration privileges and will never even see a prompt, negating any security issues with over-access.

“Users on shared machines should not make the security decisions of which processes should run with elevated privileges,” McCarley says. “By setting UAC to no-prompt mode, a school will prevent the standard users from being asked for administrator credentials, which they do not have. If, however, a standard user still needs to perform an action that requires elevated privileges, the school should utilize other products that are available to ensure that the user can still perform the necessary task.”

Yet, McCarley also says that, in the modern K-12 and higher education markets,

many students own their laptops and may want to install software at home and not have to switch between UAC modes. And professors may need to install software, access networks not normally available to students, or use Web sites and access private servers. McCarley says schools

Of Special Interest To:
Health
Education
Government
Data Centers

Key Points

- Students with their own laptops usually can have admin rights.
- UAC in Windows Vista should usually be set to no-prompt mode for most students.
- Controlling access is only one piece—how students access is also important.

should monitor user access and set up standard logins and privileged access and then maintain those accounts consistently.

“If a student owns their own computer and is responsible for maintaining the computer, then they should be configured to log in with administrator rights, with UAC enabled,” he says. “If the user retains control over their own computer, UAC will keep them more secure.”

Donoho says utilities and monitoring agents can help IT managers see what students are accessing.

“Whether it is network traffic-based or user interface-based, we can graphically see what is going,” he says. “The drawback to this is it is real time with limited archives. Of course, logs provide the archival piece but only show after-the-fact issues. This is why we use a combination of both [real-time access and logs] to get a handle on what people are doing on our servers and networks.”

Juergen Hoenig, a spokesman for NCP Engineering GmbH (www.ncp-e.com), says UAC is not just about student access to certain servers and networks but also about how they access those assets.

“Schools should control different devices and operating systems and use granular access authorizations, SSL and IPsec, automatic mechanisms for central configuration, software updates, and certificate management,” he says. “And, make sure that the TCO is low. In an IPsec VPN, the options are disconnect, continue in the quarantine zone, or start external applications on the remote PC. For an SSL VPN, access to certain applications will be granted on the basis of predefined security levels.”

Study Shows Top Wireless Data Providers

Verizon, AT&T, Sprint, and T-Mobile now hold the 3rd, 4th, 6th, and 8th spots, respectively, worldwide in terms of the total amount of mobile data revenue, according to a recent study from Chetan Sharma, an independent telecommunications researcher. Those four companies are the top four wireless data providers in the United States. Last quarter, the U.S. mobile data market passed the \$10 billion mark in revenue for the quarter. Sharma indicates that wireless data service revenues are expected to account for 1.13% of the U.S. economy by the end of this year.



Study Identifies Government Waste On Printing

A new study from Lexmark and O’Keefe found that the U.S. government wastes \$440.4 million a year on needless printing. The study found that 64% of federal employees say they could print less, and 69% say their agency could place a greater emphasis on digital documentation. Overall, 54% say they aren’t aware of the cost considerations of printing. Lexmark estimates that the U.S. government spends about \$1.3 billion on printing every year. The 380 federal government employees surveyed estimate they print 30 pages a day, which comes out to about 7,200 pages a year.

Study Analyzes Driving While Texting

According to a recent study commissioned by Vlingo, a voice-enabled mobile application vendor, 26% of the mobile phone users surveyed say they have driven while texting. The worst offenders are in Tennessee, where 42% of respondents say they text and drive. Arizona’s roads are the safest from distracted texting drivers, as only 18.8% say they drive while texting. Seven states and Washington, D.C., have banned texting behind the wheel, with a handful of other states partially banning the practice. About 83% of those surveyed agree that driving while texting should be illegal, but 40% wouldn’t have a problem with driving while texting as long as some safety precautions were taken, such as using voice-activated features or accessories. About 70% say they would use voice technology to access incoming messages. The Vlingo survey found texting and driving is more popular among younger drivers; about 60% of people ages 16 to 19 and 49% of those 20 to 29 admit they text and drive. Just 13% of people in their 50s admitted having texted behind the wheel.

Distinguish Between Standard & Power Users

Juergen Hoenig, a spokesman for NCP Engineering GmbH (www.ncp-e.com), says schools need to make a distinction between power users and those who just need standard access to IT services.

“The power user should have a centrally managed IPsec client for all his devices (laptop, smartphone) with integrated NAC,” he says. “For other users, a SSL VPN connection is normally enough.

The administrator should be able to manage both technologies with one management system. Current remote access solutions are easy to use and secure, so the balance is there.”



Some of Our Valued Customers Include:

Adobe Systems
ANL
Blue Cross Blue Shield
Brocade Communications
Cisco Systems
ConSentry Networks
Department of Defense
Extreme Networks
Hewlett Packard
Intel
Jabil
NEC
Telenav
WebEx

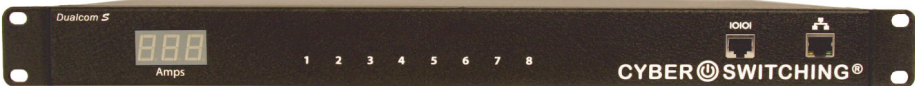
CYBER@SWITCHING®

Cyber Switching designs and manufactures power distribution units (PDU) used to distribute power to rack equipment. Data centers, production environments and development test labs use PDU’s to power cycle and manage power to blade servers, routers, switches, SAN’s, etc.

Cyber Switching tools are used by leading-edge global enterprises to enhance the functionality and reliability of their networking environments.

At Cyber Switching, we consistently strive to maintain and enhance our reputation as an industry leader in power distribution by being:

- Innovative
- Reliable
- Customer-centric
- Technically supportive
- A value added choice



“The Cyber Switching team enabled us to understand our power management issues and the products have an ROI that is quantifiable.that is value add to my budget.

The sales and technical team goes above the call to make sure we have just what we need, when we need it.”

**Data Center Manager
Fortune 1000 Company**

CYBER@SWITCHING®

2050 Ringwood Avenue, San Jose, CA 95131 • (408) 436-9830 • (408)436-9828 Fax • (888) 311-6277 Toll Free
http://www.cyberswitching.com

Lenovo Reports Losses For Quarter, Year

Lenovo Group reported its fiscal results, showing a second consecutive quarterly loss and full-year loss of \$226 million. Between January and March, Lenovo's net loss was \$264 million. In the fourth quarter of last year, global PC shipments were down by 8.2%; overall industry PC shipments decreased by 7% during this same period. The computer maker lost some of its worldwide market share to Dell, HP, and Acer, although it continued to expand in China's market from 28% to 30%. Geographic sales revenue includes \$1.2 billion in China; \$682 million in the Americas; and \$591 million in the Europe, Middle East, and Africa regions.

Free Software Foundation Drops Cisco Lawsuit

Cisco and the FSF (Free Software Foundation) have come to a joint agreement over software compliance. Cisco will appoint a Free Software Director for Linksys to ensure compliance with free software license requirements. As a result, the FSF dismissed its lawsuit against the networking company, ending a conflict that began in 2003 over complaints that Linksys WRT54G wireless router users were not receiving all the source code they should have. Cisco's Free Software Director is required to report to the FSF, notify previous recipients about their license rights, and produce source code for FSF programs paired with Linksys products. Cisco will contribute monetarily to the FSF as the FSF monitors Cisco's ongoing open-source license compliance.

Study: Privacy Too Costly

There's no free lunch on the Internet, and there shouldn't be, according to a new paper from the Technology Policy Institute. President and Senior Fellow Thomas Lenard and Senior Fellow Paul Rubin, who is also the Dobbs professor of economics and law at Emory University, authored the study, which comes out against calls for new legislation to further safeguard privacy online. Lenard's and Rubin's research discovered that the unfettered harvesting of user data helps marketers and advertisers profit, indirectly benefiting consumers by bankrolling free content and services online and providing advertising more targeted to each user's interests.

Mobile Phone Shipments Dip

For only the second time in recent history, mobile phone shipments have dipped. A new report from Ovum says that the economy has caused a 16% year-over-year decline in phone shipments in the first quarter, with a 9% drop expected for the full year. Ovum expects the mobile phone market will begin to recover in the second half of this year, although volume sales won't return to last year's levels until 2012. New mobile Internet services are expected to fuel demand somewhat, as will new phones.

NetApp Buys Data Domain

Data storage company NetApp will purchase all outstanding shares of rival Data Domain. The deal is valued at about \$1.5 billion, with NetApp acquiring the company for \$25 per share in cash and stock. The deal is expected to be finalized within 120 days after customary approvals. NetApp says its products will augment Data Domain customers' experiences by leveraging NetApp's broader scale and support capabilities. The acquisition of Data Domain allows NetApp to penetrate further into the heterogeneous disk-based backup market.

Personal Portable Security Devices

Are Pocket-Sized, All-In-One Security Devices Ready For Prime Time?

by Kurt Marko

USB THUMB DRIVES have become the sneaker's backbone, the result of plummeting prices and burgeoning capacities for flash memory. These tiny wonders are spacious enough to store an OS installation with room to spare for user data; however, they are also inherently insecure. Although vendors have addressed this shortcoming with drives incorporating hardware encryption chips, these haven't yet achieved mass acceptance. Small USB devices have also become a common vehicle for delivering secure, two-factor user authentication.

Wouldn't it be nice if secure storage and authentication features were combined into a compact Swiss Army knife of security? A relatively new class of products, PPSDs (personal portable security devices) "combine the flash storage of universal serial bus thumb drives with the access control and secure storage capabilities of the smart card," says Burton Group Senior Analyst Mark Diodati. "PPSDs leverage the USB form factor, use hardware cryptographic processing to provide smart card and one-time password device services, have secure storage capabilities, and reside in a tamper-resistant container."

The real security magic comes from the synergistic integration of the two sets of capabilities; for example, users cannot access the flash memory without first providing strong authentication. Diodati adds, "The PPSD overcomes two issues—

“The PPSD overcomes two issues—the limited storage capability of smart cards and the relative insecurity of USB flash drives.”

- MXI Security's Larry Hamid

the limited storage capability of smart cards and the relative insecurity of USB flash drives. Larry Hamid, CTO of MXI Security, says the combination allows "a device that serves multiple security functions."

PPSD Features

Furthering the theme of convergence, PPSDs also incorporate several strong authentication technologies. Like traditional USB tokens, PPSDs embed a certificate-based smart card in hardware; however, they add a software-based OTP (one-time password) generator. Unlike SecurID tokens, most PPSDs don't sport a display; thus, to generate and view the password, users must plug into a PC's USB port and run an embedded application. This makes PPSDs problematic for use on public kiosk PCs where the ports are usually disabled. Like USB security tokens or smart cards, PPSDs can hold any number of certificate-based credentials for Windows login or PKI (public key infrastructure).

PPSDs pair their strong authentication features with gigabytes of flash storage. Hardware-based encryption is accom-

- Key Points
- Personal portable security devices integrate cryptographically strong user authentication, such as OTPs (one-time passwords) and public key certificates with ample hardware-encrypted flash storage, all housed in a compact USB device.
 - The functional integration enables new usage models for secure mobile computing, such as standalone portable applications, browsers, or complete desktop environments.
 - PPSDs are a relatively new and evolving technology that suffers from hardware costs substantially higher than those of point products, such as encrypted storage or OTP tokens, complex deployment processes, and necessary additional management software.

plished via a symmetric algorithm such as AES, and, while standard USB flash drives can be encrypted with software, they are arguably less secure. In addition, PPSDs are tamper-resistant because they use their internal smart card to store encryption keys and an embedded chip to execute the encryption. Some PPSDs also support biometric authentication via an integrated fingerprint reader for added security.

Advantages & Usage Scenarios

Like plain-vanilla flash drives, PPSDs have benefitted from dramatic increases in

notes these often aren't the end of the story. "Additionally, a smart card management system is required for most deployments, adding to the cost of the PPSD deployment."

Cost vs. Alternatives

Aside from the administrative overhead and costs of ancillary software such as a CMS and OTP system, PPSDs themselves aren't cheap. For instance, 2GB devices run around \$150 with 4GB devices pushing \$200. Compare that to a 4GB flash drive bundled with software encryption for less than \$30, and it's tough to justify the PPSD's six-to-one price disadvantage if all one needs is secure storage.

The mobility of today's workforce opens enterprises up to more security risks, according to Hamid. "You either have to compromise security [or] compromise functionality." He sees PPSDs as a technology that can make security simpler, more portable, and less burdensome. Hamid believes carrying applications or entire desktop environments on a secure PPSD could emerge as an important new security model for mobile users.

Diodati is equally enthusiastic about the market potential of PPSDs but believes they need further development. "While the PPSD has the opportunity to be a stronger authentication market disruptor, the price must come down." He's also concerned about the complexity of PPSD deployment. "The orchestration of smart card management systems, key management/recovery, Active Directory, and PKI will remain a daunting task for most enterprises in the foreseeable future." Hamid agrees that costs are a problem but promises new product lines "with drastically reduced pricing."

Although the integration of strong authentication credentials and copious encrypted storage in a key fob-sized device promises to enhance and simplify mobile security while giving new meaning to the notion of a "mobile desktop," the nascent state of PPSD technology means that it's more appropriate for evaluation and prototyping than large-scale deployment. As hardware costs continue to plummet and management software matures, PPSDs could revolutionize the mobile security landscape. **P**

Key Features Of PPSDs

- Strong authentication via public key certificates or one-time passwords
- Native, hardware-based file encryption
- Portable single sign-on via the ability to carry both a user's SSO credentials and an on-demand enterprise SSO system
- Ability to securely host a complete portable desktop environment
- Ability to securely carry portable applications, particularly a hardened browser with a restricted operating environment and secure configuration

SOURCE: "POSTCARDS FROM THE ENTERPRISE: THE AUTHENTICATION EXPERIENCE"; MARK DIODATI; BURTON GROUP

THREE QUESTIONS

AVTECH Keeps Watch Over Your Infrastructure

Proactive Monitoring Solutions Help SMEs Mitigate Environmental Dangers

by Joe Pasquini

RHODE ISLAND-BASED AVTECH SOFTWARE is a leading manufacturer of environmental monitoring solutions tailored toward computer room and facilities operations of any size. Michael Sigourney, senior product specialist for AVTECH (888/220-6700; www.avtech.com), is a long-time member of the AVTECH team, whose primary responsibilities include product design, distribution, sales, and marketing.

■ **What are the biggest IT-related issues facing today's small to midsized enterprise?**

Sigourney believes that environmental monitoring has never been more important than it is today. "With many businesses concerned about their future due to worldwide economic conditions, protecting the assets and infrastructure of a business from costly or even deadly disaster is critical," he says. "Proactively monitoring the environments where expensive equipment is housed—and being able to take automatic corrective action if and when an issue or event does occur—can save organizations tens to hundreds of thousands of dollars in lost business [and] equipment repair or replacement."

Sigourney also cautions SMEs against ignoring the ever-increasing power loads of today's infrastructure. Because most equipment has a universally accepted critical temperature threshold of 85 degrees Fahrenheit, Sigourney believes SMEs are wise to implement products such as AVTECH's that include remote monitoring and automatic server shutdown capabilities that can keep track of your equipment's status and safely and quickly shut down your mission-critical systems in the event of extreme environmental conditions. Once the issues are resolved and the environmental conditions are back to normal, equipment can be restarted and the



AVTECH

SME can continue to monitor the systems remotely.

■ **What should *Processor* readers know about your company's products?**

"AVTECH offers a wide range of products to meet any organization's needs," says Sigourney. "Our products monitor many of the world's most secure data centers and other facilities."

The company's product portfolio comprises a number of hardware offerings,

amount of time with the ability to toggle between graph and sensor displays, monitor alert status for multiple units, set monitoring thresholds, set multiple IP addresses, and even update device firmware. Device ManageR also serves as a single interface for viewing all Axis network cameras found on the network.

Additional monitoring capabilities, including SNMP and multi-OS event monitoring, are available in the enterprise-class PageR software lineup. PageR provides a central event console that can collect, filter, and display status and event information for all server, TCP/IP, SNMP, and other devices or issues on local or worldwide networks.

"When a threatening condition is detected, AVTECH products immediately notify managers and staff via today's most advanced mobile technologies, enabling an immediate support response and automatic corrective action," says Sigourney.

■ **What makes your company unique?**

Sigourney contends that cutting-edge technology and powerful software provide AVTECH's marketing edge. "After 20 years of software development, AVTECH has found themselves in the unique position of being the only true software developer in the IT and facilities environment monitoring market," he says. "This is a critical difference, as hardware can be studied or copied to create similar products. However, it is the software that controls how a product works, provides the Web or application interface, determines the level of reliability, and makes a product easy to understand and use for customers." 

THREE QUESTIONS

Keeping Out Dirt, Heat, Noise & More

Simplex Isolation Systems Provides Products For Data Center Environmental Control

by Daniel P. Dern

MANY OF TODAY'S ENTERPRISE DATA CENTERS are finding themselves in need of more controlled environments that better ensure and control environmental conditions such as temperature, air, sound, and light. Founded in 1979, Simplex Isolation Systems (909/429-0117; www.simplexisolation.com) designs and manufactures cleanroom components, isolation curtains, and other elements companies use to create and deploy these specialized-environment areas.

■ **What are the biggest IT-related issues facing today's small to midsized enterprise?**

Creating and controlling physical environments have become significant concerns, according to Duane McKinnon, president of Simplex Isolation Systems. "Government standards and manufacturing regulations routinely require contamination control and process isolation." Environmental isolation is also becoming increasingly important in data centers, says McKinnon. "By isolating the hot sides of data center aisles from the cold sides, you

keep the air from mixing and can pretty much cut your cooling costs in half, simply by using isolation curtains," McKinnon says. This can let an enterprise greatly increase its data center capacity or even avoid or delay the need to move to a new data center, McKinnon says. In addition, isolating hot and cold aisles can make data centers more green and reduce utility costs for cooling.

■ **What should *Processor* readers know about your company's products?**

Simplex products include AirBlock curtains and strip doors, AirLock modular

enclosures, the GatorJaw framing system, Sure-Fold bifold curtain systems, and patented mounting systems.

"Our first product line was vinyl strip doors for temperature control," says McKinnon. "From there, we got into plant and industrial curtains for this and for dust control." After that, McKinnon says, Simplex began working on curtain isolation products for contamination control in

medical device manufacturing to prevent cross-contamination and control humidity, and in food preparation and processing assembly lines and packaging. Simplex customers include NASA, JPL, Raytheon, Mercedes-Benz, and Sony.

Custom components are important, says McKinnon, because, "Each space is unique, and things have often already been set up [that] we have to build around. We design our rooms around modular panels so that most of the room can be done from stock panels, maybe needing some custom panels to finish. That makes it easier to expand and grow, using most or all of what you have." For example, says McKinnon, "Data center cooling may be configured using plenum-to-plenum systems, top-mount cooling, ducted-air systems, or other approaches.

We have designed AirLock components to operate effectively in all these environments."

■ **What makes your company unique?**

"Innovation and performance," says McKinnon. "We've been known in the cleanroom and the refrigeration industry for developing new things, anticipating what our customers will need, and coming up with a broad spectrum of choices for the customers." In terms of performance, "We have developed patented mounting hardware for our products that allows them to operate to their fullest capabilities and also with less wear and tear," says McKinnon. 



industries such as pharmaceuticals and semiconductor and medical device manufacturing. "This, in turn, led to our creating modular components for the systems that the curtains are on and components to build the entire rooms," he says. Today, Simplex products are used in a variety of environments, including hospitals and healthcare facilities for infectious disease control, for divider curtains and machinery enclosures in industrial and manufacturing areas, in pharmaceutical and

BOOK REVIEW

Throwing Sheep

Book Offers Glimpse Into How Online Social Networking Sites Are Transforming Business

by Kurt Marko

IF YOU’VE THROWN sheep at a friend, perhaps followed a bit.ly link from a tweet only to be Rickrolled, or maybe started a flame-war with a careless blog comment, you’re certainly no social networking n00bie. If the previous sentence reads like gibberish, “Throwing Sheep in the Boardroom: How Online Social Networking Will Transform Your Life, Work and World” would be a useful, comprehensive introduction to the online reality inhabited by netizens frequenting a myriad of Web 2.0-powered social networking sites.

Social networking has exploded and blossomed into a significant cultural force. Just how momentous and lasting is still an open question, but count authors Matthew Fraser and Soumitra Dutta among the true believers.

From the first page, the authors pull no punches: “The underlying argument of this book is that the ‘Web 2.0’ revolution represents an equally powerful rupture—which we call an e-ruption—in established forms of social organization.” The authors contend that the Internet is fueling cataclysmic changes in society’s social order, established values, and, ultimately, its most powerful institutions. If this all sounds a bit grandiose and breathless, the authors freely

admit that such fantastic and borderline utopian claims are not new; however, the authors bolster the thesis with ample historical and analytic evidence.

Social Scientific Understanding

“Throwing Sheep” begins by outlining the social scientific understanding of interpersonal interactions, dividing them into three realms (personal, organizational, and consumer or civic) and examining how Internet-based social networking affects each. The book examines how social networks break down traditional, centralized, top-down power structures, diffusing influence to the edges, including people from all occupations.

The bulk of “Throwing Sheep” is devoted to a comprehensive account of the ways in which social networking affects everything from interpersonal communication to political activism, following the author’s thematic structure of identity (personal interactions),



“Throwing Sheep in the Boardroom: How Online Social Networking Will Transform Your Life, Work and World”

Authors: Matthew Fraser and Soumitra Dutta

Publisher: Wiley

Price: \$29.95 (list)

Format: Hardcover, 344 pages

status (the organizational), and power (communal or civic activity).

The conclusion of “Throwing Sheep” doesn’t offer much in the way of proscriptive recommendations, but rather a reprise of its key theme of social networking’s empowering promises. The authors do acknowledge some pitfalls or, as they describe it, the dark side of the Web 2.0 revolution, noting, “Never before have our identities been so exposed to danger.” Yet they trust that humanity’s inherent benevolence, integrity, and morality will prevail, and social networking’s benefits will outweigh the hazards that have already infiltrated social sites.

Impact On The Business World

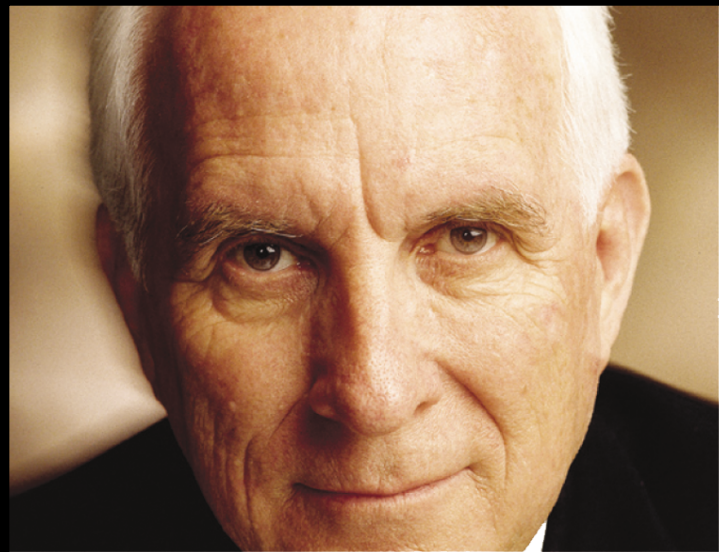
If, as the authors contend, the landscape of social interaction is indeed fracturing in profound ways—like no time since the Middle Ages—how does this phenomenon affect the business world? The authors are unsparing in their wonder and praise for such Web 2.0 stalwarts as Wikipedia, extrapolating these into a

macro-scale, paradigm-shifting trend, yet an equally persuasive case could be made that they are merely the latest example of the ease and facility of communication in the Internet age.

Social networking is certainly a trend corporate executives and IT managers ignore at their peril. In that sense, “Throwing Sheep” sits solidly in the genre of social networking utopias, emphasizing the liberating, democratizing, and empowering qualities of unfettered direct Web 2.0-facilitated communication, while sidestepping the pitfalls, drawbacks, and unintended consequences. [P](#)

KEY CONCEPTS

- ▶ The Web 2.0 revolution, epitomized by social networking sites, represents what the authors call an “e-ruption” in established forms of social organization, ushering in an era of increased self-awareness and self-reliance.
- ▶ For businesses, Web 2.0 social networks facilitate communication within the organization and between company and customer.
- ▶ Within the enterprise, social networking knocks down departmental silos and corporate walls, all barriers to communication within the organization.
- ▶ Used strategically, Web 2.0 social sites can allow business leaders greater control over their company’s brand, image, and reputation.
- ▶ Fundamentally, online social networking isn’t merely a method of communication or a byproduct of a changing society; it’s an instrument of change.



I hired employees to run my business. **NOT** to sell my old computer equipment.

When it comes to IT equipment disposal we are serious. Let us worry about Data Destruction, EPA regulations, Transportation, Down time and Insurance. Why tie up your resources or take chances with your data or environmental issues? Call DMD today.

We Purchase:

- Computers/Laptops
- Networking Equipment
- Power/Environmental
- Telecom/Network
- Complete Data Centers
- Printers

We Offer:

- Asset Tracking/Reporting
- Deinstallation/Packing/Transport
- DOD Level Data/Mechanical Destruction
- EPA Recycling/Reuse
- Ongoing Support Plans
- Technology Refresh/Install Programs

Find out why some of the top U.S. companies and Government Agencies call DMD Systems Recovery.



DMD SYSTEMS RECOVERY, INC.

A Slightly Different Company™

Phone: (602) 307-0180 Fax: (602) 307-0181

Internet: www.dmdsystems.com



Providing **QUALITY GOODS** and **SERVICES** for Industry. Member of AFCOM, Better Business Bureau, Chamber of Commerce. HP Authorized.

OPINIONS

INFO-TECH • INSIGHT

IT Service Management: Is IT Delivering The Goods?

IT service management, or ITSM, has been touted as the answer to ensuring that IT is delivering business value. Despite this, Info-Tech research indicates that 65% of enterprises fall short of delivering on this important aspect of IT.

ITSM has been shown to improve service to the business, provide better IT/business alignment, and reduce the cost of delivering services. Info-Tech research reveals some of the effects that ITSM adoption has on the enterprise: Per-ticket costs have been slashed to one-third of those without ITSM, the number of tickets per user has been reduced to less than half, and user satisfaction scores have dramatically improved.

These are easily accessible facts that don't really begin to tell the story of the kinds of positive changes that can occur when IT shifts to a business/customer-centric mentality.

What's The Problem?

Further Info-Tech research also indicates that enterprises advancing through all four phases of ITSM maturity—reactive, controlled, proactive, and optimized—make up only 5% of IT organizations, with 65% of IT shops falling into the reactive or controlled maturity levels. Why are so many organizations not achieving the benefits of ITSM?

Enterprises that start small and grow organically may not have evolved the IT function. As IT implements silos and internal specialization, the communication and

process disciplines necessary to maintaining service quality may not adequately develop. IT must become a provider of business services rather than continuing to act as technology stewards.

Business stakeholders may continue to view IT as a cost center rather than a business enabler and hence don't bring sufficient levels of management and guidance to bear. At the same time, budgets and staffing are slashed, and IT is too busy to see that they're trapped in a vicious cycle.

What About Those Frameworks?

Although there are a number of helpful frameworks and standards out there, they aren't the keys to success for many enterprises.

Senior management commitment to IT process and cultural change is critical to the success of any ITSM initiative. Without top-down support to become customer-centric and drive ITSM, the initiative will be severely hobbled. Although frameworks are helpful and provide good recipe books, it's the process and cultural changes that govern success with ITSM. Adopting a pragmatic approach to an ITSM framework, free from the complexity of more formal standards or guidelines, will yield excellent results for many organizations.

How Can IT Improve?

Unless your enterprise is very large, a simplified form of ITSM that embodies the intent of frameworks, such as ITIL and MOF, can be successfully implemented. There are three important tenets of the simplified approach: adopting a customer-centric approach to servicing the IT needs of the enterprise, viewing IT's efforts in terms

- Never change a production system while it's in production.
- Always test changes before implementing in production.
- Always have a back-out plan.
- Always communicate proposed changes to stakeholders early and often.

Although these rules seem obvious and many enterprises are aware of them, they haven't always been implemented with sufficient rigor.

Isn't ITSM Expensive?

No, not if it's done properly. As quoted above, not employing ITSM means that delivering IT services is more expensive than it should be; ITSM should be self-funding. It isn't necessary to invest in expensive software or allocate new resources

to the care and feeding of ITSM.

There are a number of inexpensive options available to manage the processes required for ITSM to have an effect. Simple things, such as a common whiteboard made accessible to IT, could be used to track issues that may require problem management. Simply assigning a role to an existing resource is sufficient to bring some focus to the area.

It may seem cruel to assign more work to those who may be overworked already, but as ITSM takes hold, they will soon realize that service management does in fact improve their work lives. ¹

Send your comments to infotech@processor.com

Russ Conwath

AUTHOR Russell Conwath is a senior research analyst at Info-Tech Research Group and has spent more than 20 years in IT. Conwath has experience in software and hardware development, systems and software implementation, IT remediation, and senior technology management in a number of industries, as well as in independent technology and business consulting.



June 23-25 | Orlando, Florida
Gaylord Palms Resort & Convention Center
gartner.com/us/iom

Gartner IT Infrastructure, Operations & Management Summit 2009

Consult the leading experts in infrastructure and operations for practical cost-optimization strategies you can implement now to **shave double-digit percentages off your operations budget this year.**

Gartner Complimentary I&O Webinars

Visit gartner.com/us/iom now to view replays

- ▶ **Green I & O: How to Save a Million Kilowatts in Your Data Center**
Presented by Rakesh Kumar, Research VP, Gartner
- ▶ **How to Significantly Reduce IT Infrastructure & Operations Costs**
Presented by Jay Pultz, VP and Distinguished Analyst, Gartner
- ▶ **Optimizing Infrastructure and Operations Costs**
Presented by Raymond Paquet, Managing VP, Gartner



IT Infrastructure,
Operations & Management
Summit 2009

gartner.com/us/iom



SPECIAL OFFER

Register now with priority code **IOMITP** and save \$400 off the standard registration fee.

Visit gartner.com/us/iom or call **1 866 405 2511**.



is a proud media partner of the
Gartner IT Infrastructure, Operations
& Management Summit 2009

FEATURED COMPANY

A Haven For Old Tape Media

Recycle Your Media Buys Data Tapes & Then Inspects & Tests Them For Refurbishing Or Disposal

by Holly Dolezalek
• • •
WHERE DO OLD TAPES GO when they die? Unfortunately, a lot of them go to landfills *before* they die. That’s because most people throw them away long before their usefulness ends. But Recycle Your Media is here to change that. The privately owned, 25-employee company in Newport Beach, Calif., has been working to keep e-waste out of the environment since 2005.



The company buys data tape media from companies when they are out of archive or no longer in use, inspects and refurbishes them, and resells them as an eco-friendly and cost-saving option to purchasing new tape. It also recycles tapes that no longer have any resale value. Its whole premise is to keep e-waste out of landfills, because tapes that have

and destruction for any tape that isn’t reusable. Recycle Your Media customers can also get offers through the company’s Web site, which allows them to select what type of tape media they have to sell and sends a request for an offer to sell to Recycle Your Media. The company has five salespeople who call on potential customers or repeat customers, although it also works with e-waste recyclers and shredding companies that buy old tapes from companies that don’t want them anymore.

Musil says the company works primarily with resellers and has about 350 clients that it regularly buys and sells from. About 20% of those customers are overseas, primarily in Europe and South America. But the bulk of Recycle Your Media’s business comes from North America. “We’re trying to grow that international business, because they’re a little more green-conscious in Europe,” Musil says. “In fact, those customers will sometimes accept nothing in return just to know that their tapes will be reused.”

When it comes to selling product, Recycle Your Media primarily works with resellers and dealers. “We get tapes directly from end users, so we work with IT managers, but we also get a lot from e-waste recyclers and shredding companies,” he says. For example, Recycle Your Media might work a deal with another company that buys a client’s unwanted electronics. Recycle Your Media buys the tape from the company, excluding tapes that have to be shredded because of security concerns.

The company requires a minimum of at least 50 tapes to make a deal, but some

track errors,” Musil says. “We run media on an RFID scanner, which will tell us the actual usage of the tape and whether it is near its end of life.”

Musil says that the company’s reputation rests on its testing of every single tape, which not even the original manufacturers of that tape can do, and on its willingness to reject certain tapes based on criteria such as cosmetic damage and errors. “We probably trash about 20% of the tape that comes through our doors,” Musil says. “What people don’t understand is that the tape that they don’t use more than once is engineered to last much longer.”

The company also does data destruction for the tapes it buys. “We abide by and meet or exceed both HIPAA and DoD (Department of Defense) standards,” Musil says. “We offer full chain of custody so that the customer will always know where the media is from pickup to eradication, and we take a serial number log at the customer site so that we can produce a log of each tape that has been through data eradication to verify each tape has been cleared. At times, we have eradicated data onsite at the customer’s location for clients whose data is very sensitive.”

Create Awareness

Musil says the current state of the economy has actually brought new business to Recycle Your Media, as has the green aspect of reusing tape rather than letting it go to a landfill when it’s still usable. But to create more awareness of those opportunities, Musil says that the company’s immediate goals include expanding its sales force. Discussing the advantage of certified tape is far more effective face-to-face, he

c o n t a c t

Recycle Your Media
(888) 757-8273
www.recycleyourmedia.com

- Buys tapes from those who are done with them, inspects and refurbishes them, and resells them to those who want tape at a discount. It also recycles tapes that no longer have any resale value.
- One of the company’s immediate goals is to expand its sales force. Discussing the advantage of certified tape is far more effective face-to-face, and a bigger sales team could do a lot more in that area.
- “Tapes will not pass our testing unless they have zero fatal errors, permanent errors, gross errors, and server track errors,” says Brian Musil, Recycle Your Media’s founder and acquisitions manager. “We run media on an RFID scanner, which will tell us the actual usage of the tape and whether it is near its end of life.”

says, and a bigger sales team could do a lot more in that area.

The company will also be expanding on its delivery of other services, such as audits (which let companies know what their tape inventory actually is), data recovery and conversion, and labeling and reinitialization.

Musil says the company’s No. 1 challenge is communicating to the marketplace that used tape is not only economical, it’s also reliable. Sometimes potential end users have tried used (or certified or resold) tape before and haven’t had a good experience, which is why Musil is quick to tout his company’s processes for certifying the reliability of its resold tape.

“We inspect our tapes for usage, and we check for mechanical problems like loose screws or hubs,” he says. “We also offer free samples of our tape to anyone so they can check it out and see for themselves that it’s reliable, and we have a 90-day money-back guarantee and a lifetime warranty. When people see that it’s reliable, and that it can be a 50% cost savings over new tape, they’re usually very interested.”

“We save the environment by keeping the used media out of landfills and . . . save customers money on equivalent-to-new media.”

- Recycle Your Media’s Brian Musil

been written to once are not trash; they’re tapes that can be written to more than 1 million times. “We save the environment by keeping the used media out of landfills and not only recoup initial IT expense, but also save customers money on equivalent-to-new media,” says Brian Musil, Recycle Your Media’s founder and acquisitions manager (www.recycleyourmedia.com).

Musil says the company sells 50,000 to 100,000 pieces of media each month. Generating several million in revenue each year since its inception, “I thought this would be a good niche,” Musil says. “It’s green, and it’s also technologically and economically sound, so it’s kind of a no-brainer.”

Tape Bids

Recycle Your Media performs tape audits for potential sellers and gives them an offer for what it will pay for the seller’s tape. The offer includes the cost of freight

customers have 10,000 or more. “We sometimes tell customers they can get a credit toward new tape if they sell their old tape to us,” he says.

Musil says that the company sells far more tape to dealers than to end users. On the other hand, it buys far more tape from end users than from dealers or resellers. Musil says that while 95% of its selling goes to dealers and 5% to its end users, 90% of its tape purchases comes from end users, and the remainder comes from recycling companies and dealers.

Inspect & Test

The tape Recycle Your Media buys goes to its facility, where each tape is inspected, tested, and either accepted for resale or rejected based on certain criteria. The data is then eradicated. “Tapes will not pass our testing unless they have zero fatal errors, permanent errors, gross errors, and server

A Sampling Of Recycle Your Media’s Offerings

Recycle Your Media (www.recycleyourmedia.com) buys and sells the following tapes:

- SUPER DLTII
- LTO2, LTO3, LTO4
- AIT1, AIT2, AIT3, AIT4
- AME1 and AME2
- 9940
- 3590J
- 3590E
- MLR
- SLR
- TR-5
- TR7
- VXA V23

The company buys and sells tape drives, libraries, and media from:

- Sony
- Fuji
- Imation
- Maxell
- Verbatim
- HP
- TDK
- And numerous other manufacturers



Data Center Managers Slash Your Cooling Costs with AirBlock™

**AIRBLOCK™**
DATA CENTER SYSTEMS

Reduce data center cooling costs by directing cold air where it is needed most – through the computer racks! AirBlock curtains and strip doors from Simplex separate cold air and warm air aisles, maximizing the dynamics of air flow to cool your data center. A system can pay for itself in months!

**SIMPLEX™**
ISOLATION SYSTEMS

1 The AirBlock product line includes transparent curtains, strip doors, panels and patented hardware; create a solution specific to your needs.

2 Save energy on both air conditioning and fan systems – 15% and 67% respectively (according to a study by the Lawrence Berkeley National Laboratory).

3 AirBlock™ data center curtains, modular partitions, ceilings, strip doors and mountings offer solutions for any data center configuration.

Call for your local dealer: **1.800.854.7951**
email: sales@simplexis.net • simplexisolationssystem.com

**HotSpotr™**

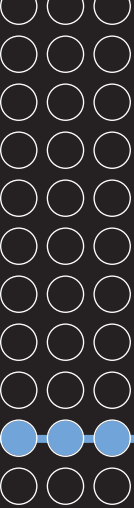
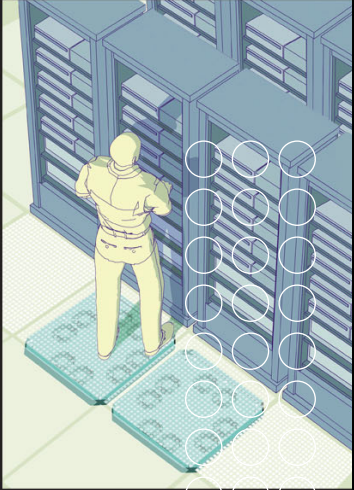
ELIMINATE YOUR DATA CENTER HOT SPOTS IN THREE MINUTES.

Go ahead, take 30 days
to evaluate it.

The HotSpotr HT-500 is an intelligent fan-assisted floor tile that can control temperatures at critical racks. HotSpotr is the fastest, simplest, and cheapest way to fix local thermal problems in data centers at a fraction of the cost of a new CRAC.

We are so confident of its performance that for a limited time, we are offering a **FREE 30-day evaluation.**

FREE 30-DAY TRIAL



Contact **AdaptivCOOL**
today for details:
hotspotr@degreeC.com
(603) 672 8900 ext 333
www.AdaptivCool.com/pro

**AdaptivCOOL**
Division of
Degree Controls Inc.

The iCAT-ITS™ Stimulus Package

Give your business some budget relief!
Buy the superior quality of iCAT-ITS™ direct from the manufacturer and save as much as 35%!

Tested to 600 Mh/z, with 240% more bandwidth than standard Category 6, iCAT-ITS™ includes a 25-year warranty - even when using your favorite connecting hardware like Commscope, Hubbell, Leviton, Ortronics, Panduit, Siemon, and others. Millions of feet have been installed and certified!

And, all that quality comes with our excellent one-on-one service!

Save money! Lower your budgets!
Stimulate your business! Call ASD at 1-800-CABLING to order your supply of iCAT- ITS™ C600 cable today!



iCAT Category 6E C600

**ASD**
Nationwide Voice, Data and Video
Products and Services
asd-usa.com
ASD is a Veteran-Owned Small Business.

**iCAT**
Information Transport Systems
1-800-CABLING
iCAT-ITS.COM

PDUs||direct
pdusdirect.com



Outfitting a Data Center?

We have an economical power solution for you.

Robust, economical power distribution solutions shipped within 24hrs – just 4-clicks away!

**COST EFFECTIVE**
Buy at 10-20% below competing sites

**FAST SHIPPING**
Products ship within 24-hours

**EASY-TO-USE WEBSITE**
Transactions completed in 4-clicks

**INDUSTRIAL GRADE QUALITY**
Highest quality PDUs on the market



PDUs||direct
Tel +1.888.751.7387
Fax +1.775.284.2065
www.pdusdirect.com
sales@pdusdirect.com

Premium Quality PDUs without the Premium Price



HT 500

Smart Underfloor Air Mover

Smart Underfloor Air

- Underfloor air mover to deliver cold air to server racks
- Supports 10-12KW racks
- Mounts directly to popular grates
- Adaptors for all 24" and 600mm floor and tile types
- Thermostatically controlled to maintain selectable temperatures
- VFD control of fan speed
- EPO option
- Certified to IEC-60950-1
- Ready for A-Cool Network for full "Room Scale Intelligent Cooling"
- All necessary accessories supplied



Proper airflow distribution is the key to providing cooling to ever higher density server racks. Failure to deliver enough cooling air to rack intakes causes recirculation of hot air and overheating of servers. Under floor obstructions such as pipes, cabling, cable trays etc. causes low static pressure and reduced flow from some perforated tiles and grates. Racks placed too close or too far away from CRAC units also face issues with low and even negative static pressure. The result is **many data centers are overcooled just to manage a few hot spots.**

HotSpotr products from **AdaptivCool** are designed for solving hot spots in data centers caused by poor airflow distribution, easily and effectively. Cooling racks efficiently saves energy, since **CRAC setpoints can often be raised with HotSpots installed.**

The HT-500 HotSpotr consists of a redundant matrix of high performance DC fans in an aluminum enclosure controlled by an intelligent thermostatic controller. Attached to or mounted **underneath a grate** or perforated tile; HotSpotr **delivers cooling air where, when and in the right amount.**

HT-500 operates in one of two modes. In **Stand Alone** mode, sensors placed at the rack top intakes sense the critical rack temperatures. The smart controller maintains proper cooling by dynamically varying the fan speed. In the Networked **"Room Scale Intelligent Cooling"** mode, several HT-500s and overhead HT-710s plus additional sensors are networked to a central controller. This controller then monitors the thermal health of the entire data center and actively manages airflow distribution to match the heat distribution in the room.

HT 500

Smart Overhead Air Mover

- Overhead air mover to move cold air to cold aisles or return hot air to CRAC
- Thermostatically controlled to maintain duct air temperature
- Continuously variable fan speed
- Dual emergency shutdown feature to meet fire code
- Ready for A-Cool Network for full Room Scale Intelligent Cooling
- All necessary accessory supplied



In a data center, hot exhaust air from servers returns back to CRACs over a long distance usually mixing with precious cold air in its path. By isolating hot air from the room environment and returning it to directly to CRACs, hot spots are eliminated and cooling efficiency is increased.

HotSpotr products from **AdaptivCool** are designed for solving hot spots in data centers easily and effectively. They may also be networked to create a large room scale intelligent cooling system.

The HT-710 consists of a high performance backward curved blower housed in an aluminum casing, controlled by an intelligent Thermostatic Controller. HT-710 operates in one of two modes. In **Stand Alone** mode, the temperature of the air through it is continuously controlled by varying the fan speed. In the **Networked** mode, several HT-710s, HT-510s and sensors are networked to a central controller that monitors the temperature profile of the entire data center and actively manages airflow distribution to match heat distribution in the room.

The HT-710 operates on 100-130VAC. Two temperature sensors measure the duct air temperature and control the fan speed. The standard A-Cool Net interface provided can be used to network multiple underfloor and overhead HotSpotrs. The HT-710 is supplied with all necessary accessories such as two 25' flexible ducts, two ceiling mounted diffuser vents and chains for suspending the HT-710 from the ceiling.

HT 710

www.AdaptivCool.com | 603.672.8900 ext.333 |

ENCLOSURES & RACKS

Hergo is a U.S. designer and manufacturer of Technical Workspace Solutions.

Visit our Website at www.hergo.com to learn more about our products.



An original equipment manufacturer since its inception in 1992, Hergo remains THE trusted source for technical furniture.



Terms, specifications & appearance are subject to change without prior notice • © 2009 Hergo®

Processor Advertiser Directory

The following pages provided a brief snapshot of Processor advertisers and the products they offer. Ads are sorted by category, making it easy for you to find advertisers offering the products and services you need.

For more detailed information on these advertisers and the products they offer, look for their ads inside this issue.

To list your company and products, call (800) 247-4880.

PHYSICAL INFRASTRUCTURE



At A-Neutronics, our mission is to provide our customers with reliable products that best satisfy their needs. We are a small company with little overhead, which means savings for you. And while we offer discount-priced products, we don't discount the service. We provide professional and helpful personnel to assist you with your purchase and technical support issues. All products are UL-approved and ship daily from stock.

Products Sold:
13 different specialty power strips, including metered power strips, surge suppression power strips, IP-managed power strips, and industrial rackmount power strips

(877) 263-8876 | www.a-neutronics.com

PHYSICAL INFRASTRUCTURE



With increasing rack density and server power, data centers are more active than ever before. And with this increased activity comes increased thermal output. The AdaptivCool division of Degree Controls was established in 2005 to address thermal-management problems in data centers. AdaptivCool builds on Degree Controls' expertise in thermal management through the effective management of airflow, helping data centers address concerns with no rack movement or downtime.

Products Sold:
The AdaptivCool system and HotSpotr line of active airflow components, which direct cooled air where it is needed and return warm air back to CRAC units for humidity control.

(877) 334-7332 | www.AdaptivCool.com

PHYSICAL INFRASTRUCTURE



AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

Products Sold:
A full range of products that monitor the IT and facilities environment, including temperature, humidity, power, flood, room entry, and UPS

(888) 220-6700 | www.AVTECH.com

PHYSICAL INFRASTRUCTURE



BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

Products Sold:

- Power control, distribution, management, and metering
- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE



Cyber Switching began pioneering power distribution technologies in 1994. Our PDUs are used to power cycle and manage power to blade servers, routers, SANs, and other data center equipment. Our intelligent PDUs can monitor current individually by outlet and also provide virtual circuit breaker protection on an individual outlet basis. **No other PDU on the market offers these unique features.**

Products Sold:

- Intelligent power management
- Value-added power management
- Metered power distribution
- Three-phase power distribution
- Energy management and control
- Switches
- Patch Panels

(888) 311-6277 | www.cyberswitching.com

PHYSICAL INFRASTRUCTURE



Eaton has many global brands that provide customer-driven PowerChain Management™ solutions to serve the power system needs of the industrial, institutional, government, utility, commercial, residential, IT, and mission-critical OEM markets worldwide. For more than 40 years, Eaton has worked closely with customers to meet their requirements for innovative, end-to-end power protection and management solutions.

Products Sold:

- UPSs
- ePDUs, including Basic, Metered, Monitored, Advanced Monitored, Switched, and Automatic Transfer Switch

(877) 785-4994 | www.epdu.com

PHYSICAL INFRASTRUCTURE



At Hergo, we understand your technology requirements and the best way to incorporate that technology into your workspace. The Hergo product line combines a variety of interchangeable parts, most of which are standard components. All Hergo racks are made of heavy-duty steel and are powder coated, offering superior quality and durability, as well as better ultraviolet ray and corrosion resistance.

Products Sold:

- Cabinets and enclosures
- Server racks
- Computer carts
- Cable and power management systems

(888) 222-7270 | www.hergo.com | GSA Contract Number: GS-29F-0133G

PHYSICAL INFRASTRUCTURE



Information Support Concepts markets products for networking, telecom, corporate training rooms, and school computer classrooms. Information Support Concepts, founded in 1987, believes in taking a hands-on approach with customers, providing for a better overall buying experience. Information Support Concepts also offers access to product managers to talk about custom or difficult applications.

Products Sold:

- Server rack cabinets
- Rackmount keyboard monitors
- Rackmount power PDU, UPS
- Portable cases
- LAN furniture
- KVM switches
- Cables
- Custom requests

(800) 458-6255 | www.iscdfw.com

PHYSICAL INFRASTRUCTURE



IT Watchdogs got its start when founder Gerry Cullen developed a product called Weather Goose in an apartment in Houston. Today, the company has seven different climate monitors and more than 70 different product numbers. At IT Watchdogs, we believe in providing customers with low-cost climate monitors that have the same or better features than competitors'. Plus, we offer fast, professional response to customers, with support handled by the same programmers and engineers that develop and maintain our products.

Products Sold:
A full line of environmental products, including climate monitors, sensors, and cameras

(512) 257-1462 | www.itwatchdogs.com

PHYSICAL INFRASTRUCTURE



The MovinCool division of DENSO Sales California has pioneered the use of portable air conditioning solutions for a variety of North and South American markets since 1982. MovinCool works with a national network of distributors and suppliers to provide product sales, installation, and rental.

Products Sold:

- Office Pro Portable Air Conditioner Series for indoor environments such as server and telecom rooms
- Classic & Classic Plus Portable Air Conditioner Series for moisture removal, outdoor and industrial spot-cooling
- CM12 ceiling-mounted air conditioner for cooling small server rooms or telecom closets

(800) 264-9573 | www.movincool.com

PHYSICAL INFRASTRUCTURE



Established in 2008, PDUsDirect.com is an online wholesaler providing a select line of PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process.

Products Sold:
A complete line of 20A PDUs, including metered, basic, and switched.

(888) 751-7387 | pdusdirect.com

PHYSICAL INFRASTRUCTURE



RACKMOUNT SOLUTIONS, Ltd
where customer service matters

Rackmount Solutions' mission is to listen to the IT engineer's specific needs and deliver superb-quality, high-performance products through continuous product innovation and operational excellence. We pride ourselves in providing quality customer service, products that fit your IT requirements, and solid value for your money.

Products Sold:

- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 | www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE



Server Technology
Solutions for the Data Center Equipment Cabinet

Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

Products Sold:

A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

(800) 835-1515 | www.servertech.com

PHYSICAL INFRASTRUCTURE



SIMPLEX™
ISOLATION SYSTEMS

Since 1979, Simplex Isolation Systems has been setting new design standards in modular expandable cleanroom components, isolation curtains, hardware, and new product development. Fontana, Calif.,-based Simplex's unique strip doors and mounting systems are designed for quick installation. Simplex parts and materials perform with optimum efficiency, last longer, and save you money. And with Simplex, you are always backed by industry expertise, product knowledge, and the best warranties in the market.

Products Sold:

- Cleanrooms
- Enclosures
- Strip doors
- Curtains

(877) 746-7540 | www.simplexisolationssystems.com

PHYSICAL INFRASTRUCTURE



Snake Tray

From the company's inception in 1996, Snake Tray's focus has been the development of superior products that help eliminate repetitive, labor-intensive installation steps. Snake Tray products are designed better than traditional cable management and power distribution products, allowing our products to deliver unsurpassed cost savings because they're easy to install. Added to this is our expertise in datacom and data center cabling, which aids our customers during project planning.

Products Sold:

- Cable management
- Distribution boxes
- Power distribution
- Airflow solutions

(800) 308-6788 | www.snaketray.com

PHYSICAL INFRASTRUCTURE



TEMPERATURE@LERT®
USB TEMPERATURE MONITOR WITH EMAIL ALERTS

Boston, Mass.,-based Temperature@lert manufactures products designed to be as simple as possible to provide the most reliable temperature monitoring for your IT equipment. Temperature@lert has been growing at a steady, measured pace, which allows it to exceed customer expectations in terms of product quality and support, and its customer support staff is composed only of members of its product engineering team, ensuring superior support.

Products Sold:

USB and Wi-Fi versions of the Temperature@lert device, which monitors data center temperature, alerts you to problems, and takes corrective action as needed.

(866) 524-3540 | www.24sensor.com

PHYSICAL INFRASTRUCTURE



designed and
manufactured by
upsite
technologies®

Founded in 2001, Upsite Technologies has established itself as a leader in the marketplace for high-availability data center solutions, concentrating on hot spots and energy-efficiency issues. Upsite founder Kenneth G. Brill recognized a need for products and solutions reaching far beyond standard engineering and consulting offerings. Upsite has developed a suite of products designed to increase the reliability and availability of data centers while reducing energy costs.

Products Sold:

A line of products designed to solve heat-density problems in data centers, including blanking panels, temperature strips, and raised floor grommets to seal cable openings.

(505) 982-7800 | www.upsite.com

NETWORKING & VPN



ASD
Nationwide Voice, Data and Video
Products and Services

ASD's mission is to be the best nationwide provider of design, deployment, and project management services in the voice and data network integration industry. We offer turnkey, reliable, and cost-effective communications systems tailored to fit the client. Our goal is to be the single point of contact for services to end users, systems integrators, manufacturers, building owners, and others. Our commitment includes delivering projects on time and on budget and offering superior, customized design.

Products Sold:

Voice and data network integration services, along with a line of networking-related products.

(800) CABLING (222-5464) | www.icat-its.com

NETWORKING & VPN



BARRACUDA
NETWORKS

Companies rely on Barracuda products because they're easy to deploy and use, don't require IT expertise, and come with automatic updates. Barracuda does not charge per-user, per-port, or per-server licensing fees, making its products among the most affordable. As a customer, you'll be backed by Barracuda Central, an advanced 24/7 security operations center that works to monitor and block threats.

Products Sold:

- Spam and spyware protection
- Email archiving
- Data backup and disaster recovery
- Content filtering and application blocking
- Firewalls and SSL VPN
- Link and load balancing

(888) 268-4772 | www.barracuda.com

NETWORKING & VPN



BLACK BOX
NETWORK SERVICES

Black Box is the world's largest independent provider of voice communications, data infrastructure, and product solutions. Shop at Black Box for 118,000+ networking products, a best-price guarantee, and FREE, live, 24/7 Tech Support.

Products Sold:

- Cabinets and racks
- Cables
- Datacom
- Digital signage and multimedia
- Industrial
- Infrastructure hardware
- KVM
- Networking
- Power
- Premise security
- Servers, storage, and PCs
- Voice communications

(877) 877-2269 | www.blackbox.com

NETWORKING & VPN



GoToAssist
EXPRESS

GoToAssist® Express™ lets you easily view and control your customer's computer online, so you quickly resolve their technical issues. You'll amaze customers by solving problems on the spot while reducing travel time and lowering supports costs. GoToAssist Express is brought to you by Citrix Online, a fast-growing division of Citrix Systems. Every month, more than 15,000 new customers start using Citrix Online's services to work from anywhere with anyone—using remote-connectivity tools to save time, get more done, and connect to others around the world.

Products Sold:

GoToMyPC, GoToMeeting, GoToAssist, and GoToWebinar.

(800) 549-8541 | www.gotoassist.com/processor

NETWORKING & VPN



ScaleMP
TM

ScaleMP is the leader in virtualization for high-end computing, providing higher performance and lower TCO. vSMP Foundation is a software-only solution that eliminates the need for extensive R&D or proprietary hardware components in developing high-end x86 systems and reduces overall end-user system cost and operational expenditures. vSMP Foundation aggregates up to 16 x86 systems to create a single system with four to 32 processors (128 cores) and up to 4TB of shared memory.

Products Sold:

The vSMP Foundation, which lets you aggregate multiple x86 systems into a single virtual x86 system.

(408) 342-0330 | www.scalemp.com

CLIENTS



dtSearch
www.dtsearch.com

Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

Products Sold:

Text retrieval products, including:

- Desktop With Spider
- Network With Spider
- Publish For CD/DVDs
- Web With Spider
- Engine For Win & .NET
- Engine For Linux

(800) 483-4637 | www.dtsearch.com

EQUIPMENT DEALER



Since 1987, Compurex Systems has sought to be a one-stop source of technology, including systems and storage, network applications and peripherals, and service and repair. Compurex Systems prides itself on offering competitive pricing, rapid delivery, quality product, and attention to detail and customer service. At Compurex Systems, we look to make long-lasting relationships with our customers and suppliers. Our customers return because they know they can trust us.

Products Sold:

A complete line of new and certified refurbished servers, networking, storage, and telecommunications hardware and services from DEC, Compaq, and HP.

(800) 426-5499 | www.compurex.com

EQUIPMENT DEALER



The Data Media Source is your best source for discounts and deals on all formats of data media products. We have a huge inventory of brands, categories, and capacities at prices below wholesale. We buy up excess inventories, closeouts, and returns and offer our resellers pricing below the direct manufacturers on most items. Our 20+ years in the business of selling only data media gives us the experience and resources to make every order you place with us more profitable for you.

Products Sold:

A complete line of data media, including DLT, SuperDLT, LTO, AIT, and QIC

(800) 252-9268 | www.datamediasource.com

EQUIPMENT DEALER



DMD Systems Recovery offers new and refurbished computer equipment and services. We provide exceptional value and quality because of our experience in procuring high-quality equipment. DMD also provides cost-effective and environmentally safe computer and communications equipment disposal services. Our dedicated staff can handle all aspects of equipment disposal, from logistics to reporting.

Products & Services:

Equipment disposal services, along with a complete line of used and refurbished equipment, including computers, networking, laptops, monitors, point of sale, servers, storage, and telecommunications.

(877) 777-0651 | www.dmdsystems.com

EQUIPMENT DEALER



IGS is an independent manufacturer and source of supply, service, and depot repair of obsolete Digital Equipment Corp. parts, products, and systems. We maintain an extensive inventory of DEC parts and equipment; some date from the 1960s. We refurbish and service these parts, adding current technology when applicable. We provide Advance Replacement Service within 24 hours if we have the item in stock and, with 75,000 stock items, chances are we will.

Products Sold:

Digital Equipment Corp. parts, products, and systems, including memory, storage, processors, display and video, printers, and cables, for repair, lease, or rental

(888) 332-7278 | www.decparts.com

EQUIPMENT DEALER



At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

Products Sold:

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
- CPUs, memory, disks, tapes, displays, and controllers
- Services, including system design and installation, maintenance, and buyback of existing hardware

(405) 715-3686 | www.itechtrading.com

EQUIPMENT DEALER



- PaceButler buys used cell phones.
- In business since 1987
- Redeploy your used phones after upgrade
- Donation option – directly to the non-profit of your choice
- Dedicated to customer satisfaction
 - A+ Rating with the Better Business Bureau
 - Payment issued in four days
- Dedicated to employee development
 - Book reading program
 - Health and fitness programs

Products Sold:

We buy used cell phones & PDAs, including Apple, LG, Blackberry, HTC, Motorola, Nextel, Nokia, PalmOne & Samsung.

(800) 248-5360 | www.pacebutler.com

EQUIPMENT DEALER



In 1987, Pegasus Computer Marketing started providing mainframe products to the end-user market. What began as a sales-only organization soon adapted to offer in-house repair and refurbishment. During the past 10 years, Pegasus has focused primarily on the point-of-sale and barcode industries, buying, selling, and providing service contracts for anywhere from a few scanners to hundreds.

Products Sold:

We buy, sell, and service:

- Point-Of-Sale Equipment and POS/PC Flat Panels
- Wired and Wireless Barcode Hardware
- Kronos Time Clocks and Accessories

(800) 856-2111 | www.pegasuscomputer.net

STORAGE



RecycleYourMedia.com is concerned about the destruction of our environment caused by e-waste. We realize there needs to be a solution that is ecologically sensible, technologically reliable, and economically viable. The answer is to sell us your new, used, or even obsolete media. Your sensitive data is secure and destroyed with manufacturer-approved processes and equipment, and you will also be supplied a Confidentiality Agreement on request. It's easy to recycle your data cartridges with RecycleYourMedia.com.

Products Purchased:

Super DLTII / LTO2, 3, 4 / AIT1, 2, 3, 4 / AME2 / 9940 / 3590 / MLR, SLR / TR5, 7 / VXA / V23

(877) 798-2737 | www.recycleyourmedia.com

EQUIPMENT DEALER



Stallard Technologies buys and sells quality preowned and refurbished Dell, Compaq, IBM and HP servers and workstations. At Stallard Technologies, we work to find the best values on business networking hardware, so you can accomplish your networking goals. We have a staff of trained and qualified technicians that manage diagnostic checks on all our products. When products pass, they get the Stallard Technologies seal of Approval and Warranty.

Products Sold:

- Servers
- Storage
- Workstations and PCs
- Racks and server clusters
- Parts and accessories

(877) 851-2260 | www.stikc.com



PROCESSOR

Subscribe Today!

Call (800) 819-9014

or

Subscribe Online!

Go to www.processor.com



Their computer.
Your brain.

GoToAssist Express lets you view and control your customer's computer online, so you can use your expertise to fix the problem yourself. Resolve the issue, keep your customer satisfied and move on to the next task. Support smarter with GoToAssist Express.

Try it free for 30 days at gotoassist.com/processor.

